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ADDRESS.

RECENT EXPERIENCE OF SURGERY OF THE KIDNEY.

President's Address before the Twenty-second Annual Meeting of the Mississippi Valley Medical Association at St. Paul, Sept. 15, 1896.

BY H. O. WALKER, M.D.

PRESIDENT OF THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

DETROIT, MICH.

The paucity of literature upon renal surgery has prompted me to report three cases in which four operations were performed, representing nearly all the operative procedures that are now done upon the kidney.

Case 1. Sacculated kidney with suppuration and nephrolithiasis, nephro-lithotomy and subsequent nephrectomy.—Aug. 4, 1896, J. R., age 29 years, was referred to me by Dr. E. M. Houghton for operation, with a history as follows: When 6 or 7 years of age he remembers having experienced severe pain in the region of the left kidney, which lasted for a day or two. These attacks occurred afterward at intervals of from one to three months; at one time he had none for nearly a year. He did not experience any disturbance of the bladder until he was about 12 or 14 years of age. This combination of pain in the region of the kidney and the bladder continued, with increasing severity, until three months ago, when it was constant. He has observed a sediment in the urine for nearly fifteen years, but at no time did he observe any calcareous deposit. Dr. Houghton, from frequent examinations of the urine, found pus in quantity, blood at times, but no casts, and from the character of the symptoms diagnosed a cystic kidney with calculi. The patient presented a marked emaciation, pulse 100, temperature 99.6. Percussion revealed well marked dullness on the left side, extending from beneath the ribs to the brim of the pelvis and nearly to the medium line. By two days' observation I was convinced that Dr. Houghton was correct in the diagnosis. I had, however, suspicion of trouble in the right kidney. Therefore the character of the operation must be in accordance with that suspicion.

Aug. 6, 1896, I performed the operation by making an incision just below the twelfth rib, anteriorly, obliquely downward to the crest of the ilium (free exposure is necessary in any operation upon the kidney, therefore the necessity of a long incision). After thorough division of the structures down to the renal space and with pressure by the hand of an assistant in front, I stripped the fatty capsule off from the kidney in front with my fingers, giving a large exposure of its surface. Palpation and inspection revealed a large, irregular, fluctuating tumor, through the walls of which the calculi could be readily felt. Before incising the kidney I fastened the capsule to the lower opening of the wound with several catgut sutures to prevent the contents of the kidney escaping into the torn and divided tissues. A large quantity of pus and urine, probably two pints, flowed from the incision made into the kidney. There were several communicating cavities, from which I removed large calculi, somewhat embedded in the walls. I could readily feel the ureteral orifice with my fingers, but was unable to pass anything through it to the bladder. After thorough irrigation and introduction of rubber drainage the wound was closed by interrupted silkworm gut sutures. The after treatment consisted in irrigation twice daily. The discharge of pus and urine was considerable in quantity. He passed 17 ounces of urine per urethram the next day, aside from that through the drainage tubes.

The recovery following the operation was uneventful and the temperature never rose above 100 degrees and the pulse was from 80 to 100, the amount of urine increasing to 28 ounces daily. Although there was undoubtedly a certain amount of urine excreted by the left kidney, as was evidenced from the soaking of the dressings, that little escaped into the bladder was due to "the bending or oblique insertion of a non-stenosed ureter," as described by Dr. Christian Fenger (*Annals of Surgery*, page 637, 1895).

The circumstances of the patient would not permit the long-continued treatment necessary to follow out Fenger's "conservative operative treatment of sacculated kidney." I was also doubtful if there was much functionating power of the kidney left. It was therefore decided to do a nephrectomy, which was performed Aug. 29, 1896. I first inverted, by incision and suturing, the fistulous opening to prevent the escape of septic material. The incision was in the same line as before. Careful dissection liberated the entire kidney and the vessels and ureter were ligated separately. There was but little hemorrhage. The wound cavity was packed with a long strip of gauze and the edges approximated, as in the first operation. An analysis of urine on the day before the operation showed pus, specific gravity 1022, acid. The daily quantity was 26 to 28 ounces and the condition of the patient about the same as when I first saw him. On the following day the amount of urine passed was 18 ounces; this gradually increased until September 12, it was from 30 to 40 ounces. The wound has nearly healed, appetite good, and he walks about the halls of the hospital. There is still some pus in the urine but this is gradually disappearing. The following is the report of the microscopist: "Microscopic examination shows an abscess wall from which inflammation products are infiltrating surrounding tissues. The parenchyma of remaining portion of kidney shows chronic change which leaves very little, if any, of glandular portion of the kidney functional. The glomeruli are either contracted or have disappeared. The microscopic examination does not reveal cause of changes seen, but they are probably brought about by causes which produce abscess."

Case 2. Tubercular kidney, nephrotomy and nuclein treatment.—Mrs. P. H., age 28, came to me Aug. 9, 1896. While teaching school four years ago, she first noticed pain in her right side below the waist; she shortly afterward developed a leucorrhea. The pain in the right side gradually increased and was exaggerated on lifting or walking. Soon after the appearance of the leucorrhea a cystitis developed, which has been present ever since. She informed me that urination is very frequent, every half hour to two hours, and that the urine contains a large amount of deposit. Inspection of the abdomen revealed a large indurated, immovable mass which she has noticed for several months gradually increasing in size. It extends from below the ribs to the crest of the ilium on the right side and is extremely painful upon manipulation. She was very much emaciated, complexion sallow and her pulse was 110 and temperature 102.5.

My diagnosis was disease of the right kidney, probably tubercular, and I advised further observation before deciding as to the character of the operation. She entered the Harper Hospital, Aug. 10, 1896. Repeated microscopic examinations of her urine did not reveal any tubercule bacilli, but it

contained large quantities of pus and broken down kidney epithelium. Cystoscopy and catheterization of ureters showed discharge of pus from both, and although we did not find bacilli tuberculosis, I still believe that the patient was suffering from tubercular kidney; as she did not improve, I advised a nephrotomy, which was done Aug. 16, 1896, as I did not think a nephrectomy would be practicable, first from the fact that both kidneys were affected; second, that in these advanced cases adhesions are so extensive that in all probability death would be the result. On dividing the tissues down to the kidney I found it firmly bound by adhesions. When the kidney was incised pus escaped in considerable quantity, together with broken down kidney substance, which macroscopically, had all the appearance of a tubercular deposit and afterward proved to be so. It is not always possible to determine specifically the true character of secretions and excretions from important organs even by careful microscopic examinations. I removed as much of the cheesy material as was possible with the curette. The hemorrhage, which was profuse, was controlled by packing the cavity with gauze.

From such a history and condition the ultimate result must be necessarily fatal by any operative procedure that might be instituted. I therefore prescribed the nuclein treatment with which I have had very satisfactory results in surgical tuberculosis, especially of the genito-urinary organs. Little could be expected in so forlorn a case; she, however, began to improve in a few days, had a better color, improved appetite, and entire subsidence of bladder symptoms, retaining urine nearly all night. She left the hospital September 9, with the wound still open and discharging. The result in this case is uncertain.

Case 3. Movable kidney; fixation by modified operation.—Miss A. Z., age 23, was referred to me, at St. Mary's Hospital, August 25, 1896, by Dr. A. H. Steinbrecher of Detroit, for operation.

Since leaving her native country, Russia, three years ago she has been an invalid. Chronic constipation, flatulence, indigestion, supra-orbital neuralgia, were the prominent symptoms, together with distress and pain in the right hypochondriac and lumbar regions. This latter symptom, for the last eleven months, has been more distressing when she was in an upright position compelling her to remain in bed most of the time. A tumor, freely movable, was discovered in the right lower hypochondriac region, and toward the median line. No difficulty was experienced in displacing from and replacing it in the normal position of the kidney. The urine was found to be normal. My experience in fixation of movable kidney has been extensive but not always with the most satisfactory results, by the usual methods advocated. The operation that I employed in this case, although original personally, I find in looking up the literature on the subject that others have resorted to a similar method. I operated August 26, 1896. The patient was placed in the semi-prone position and the space between the ribs and the ilium made prominent by a sand bag. The incision was made in a similar manner as in the previous case and the kidney freely exposed, permitting thorough inspection and palpation, drawing it well out through the opening, which was easily done on account of the existence of a long pedicle. Not discovering anything abnormal either of the kidney or the upper end of the ureter, it was placed in its proper position and the capsule divided for a distance of three inches on its convexity longitudinally, using care not to wound the cortical substance. The capsule was then separated from the kidney, for a distance of half to one inch, entirely around the cut, and the cut edges were fastened to the fasciæ and muscles, by interrupted catgut sutures, so that when the suturing was complete, there was a solidity of fixation never equaled in any other method that I have used.

It will be observed that I did not, as others have recommended, introduce a suture through the deep substance of the kidney for the purpose of holding it in position while the suturing of the capsule was being done. This is unnecessary if it has been freely liberated from its bed. The deep suture very easily cuts its way through the substance of the kidney even though gentle traction only is made by the assistant. This cutting is often followed by almost intractable hemorrhage and leaves a damaged kidney.

The wound was united by deep silkworm gut sutures, excepting at its lower end, which was left open, and the cavity packed with a long strip of gauze, in order to favor slow cicatrization and a firm attachment of the kidney. It is a question, however, whether a complete closure at once would not result as satisfactorily as though the wound was left to heal by slow granulation. This solution will be better ascertained by further experience.

This patient, August 12, is still in the hospital with the wound nearly healed and will be kept in bed until after the expiration of four weeks, when she will be permittted to get up, as by that time, it is reasonable to suppose that the adhesions will be firm enough to hold the kidney in place.

The frequent occurrence of movable kidneys, about one in every five or six women, makes the subject one of importance and much depends on the surgeon to relieve the distressing symptoms that are liable to occur. Limited displacement is quite as apt to cause suffering as those more extensive, for it has been frequently noticed that a kidney with a long pedicle produces symptoms that are but trifling. The simplicity of the method just described commends itself both as to safety and a greater possibility of permanent satisfactory results. The various methods of transfixion of the kidney with ligature are uncertain as to results and to a greater or less extent dangerous as regards its future function.

In making a choice of a route to reach the kidney, it seems to me, there should be no hesitancy in selecting the anterior, in preferance to the lumbar route. The only reason would be the making of a nephrotomy for the purpose of drainage of an abscess of the kidney. Lumbar nephrotomy is much more difficult and dangerous than by the anterior route. In doing an nephrotomy for relief of a kidney, with multiple abscess, by the lumbar route, it would often be found necessary to do a nephrectomy as it is frequently impossible to empty all the abscess cavities without making a T incision. The danger from the hemorrhage is necessarily limited by full exposure of the kidney and there is less susceptibility of sepsis from a kidney where free dissection is made, than by the tearing and pulling by the lumbar route.

In conclusion, I am inclined to the following opinions:

1. That the most practical route to the kidney is anteriorly.
2. The selection of the lumbar route is largely by precedent and unnecessary timidity on the part of the surgeon.
3. A nephrectomy for tubercular kidney is not always practicable.
4. Fixation of a movable kidney by stitching its reflected capsule to the muscles is much to be preferred to that of transfixion and anchorage by stout ligatures.

ORIGINAL ARTICLES.

IMPROVED TRACHELORRHAPHY.

Read by title in the Section of Obstetrics and Diseases of Women, at the Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5–8, 1896.

BY AUGUSTIN H. GOELET, M.D.

PROFESSOR OF GYNECOLOGY IN THE NEW YORK SCHOOL OF CLINICAL MEDICINE, ETC.

The benefit afforded by properly performed trachelorrhaphy in appropriate cases is very generally admitted, and though the operation may be applied unnecessarily by some and may be performed incorrectly by others, upon the whole it has perhaps been productive of more good than any other operation in gynecologic surgery. The difficulty in those cases which do not yield satisfactory results lies usually in

not removing a sufficient amount of the diseased tissue of the cervix, or in removing too much on the outer or vaginal margin and not enough on the inner margin or that next the canal, thus leaving a wedge of tissue which prevents proper coaptation of the flaps and puts too much strain on the sutures. This is partly because the denudation is done with scissors, which can seldom be made to cut through such dense tissue where it is desired to cut. They invariably slip, and considerable trimming is necessary afterward to get the flaps in proper condition for the application of the sutures. This consumes a great deal of time and is a serious disadvantage, as well as the fact that the scissors will frequently cut where it is not desired to cut and too much or too little tissue is removed.

Another serious objection to the ordinary trachelorrhaphy is the great difficulty of inserting the sutures, because of the density of the tissue and the awkward position, for the operator, of the parts to be united. I venture to assert that any operator would rather do an abdominal section than one of these tedious and fatiguing cervix operations. It is therefore, because I believe I have simplified the operation and made it quicker and easier, that I have been encouraged to describe the method which I have employed with so much satisfaction.

In the first place, the denudation is done with a knife especially designed for the purpose, which consists of a short two-edged blade set at an abtuse angle to the shaft and handle (see Fig. 1). I am well aware

FIGURE 1.

that several knives have been designed for this purpose before, but so far as I know none have been made upon the principle of this one, and they have not proven satisfactory else they would have been more used. These knives are made in two sizes so as to be useful in all cases, since the cervix in some instances is thick and the flaps deep, and in other thin by compassion. The method of using the knife is to seize one angle of the laceration with a tenaculum and transfix it with the knife, which is then drawn forward, making a clean cut and denuding the flap out to the lower margin of the cervix with one stroke. It is then inserted again on the other side and the opposite flap denuded in the same manner. If now the tissue which is to be removed remains attached at the angle, a reverse movement of the knife severs it with its other cutting edge. Besides the greater ease of denuding with the knife, there is another advantage, namely, it can be inserted and held in such manner as to avoid leaving a wedge of tissue on the inner edge of the denuded surface.

In the next place, a special needle is employed for inserting the sutures. I have abandoned the straight needles and the needles with slight bend near the point, and use a nearly half-curved, round needle, much smaller in diameter than the needles usually employed in this operation, with a flattened spear point. These needles can be inserted into the hardest cervix with the greatest ease. I have never yet broken one of these needles, and find that they can be inserted with very much less force than any other needles which I have used.

Next I use for suture material either silver wire or silkworm gut which has been especially prepared so as to render it pliable and easily tied. I do not think catgut, silk, or any other suture which is not impervious should be used in plastic work upon the cervix. The silkworm gut is prepared in this manner: Each strand is carefully wiped off with a pledget of gauze or cotton saturated with ether, and a number of strands are put into a glass tube of suitable length, the ends being stoppered with corks. The tube is then filled with a 2 per cent. solution of lysol, one end is left uncorked, and it is placed in a sterilizer with the uncorked end above the level of the water and it is boiled for half an hour. The lysol solution makes the silkworm gut very pliable, so it can be tied as easily as catgut, and in addition it renders it thoroughly aseptic.

The operation is further facilitated by placing the patient in the lithotomy position.

Technique of the operation.—It is of the greatest importance that the patient be carefully prepared for the operation. For two weeks every second day a tampon of prepared wool soaked in glycerin is placed against the cervix to deplete and soften it. This is removed after twenty-four hours and a copious douche of hot water is projected against the cervix and vaginal vault by means of a syringe giving an interrupted flow. At each sitting for the introduction of the glycerin tampon any cysts of the Nabothian glands detected on the cervix are punctured and emptied.

Two days previous to the operation the patient is given a calomel and soda purge and she is placed upon a restricted diet. The morning of the operation she is given a saline cathartic, the vulva is shaved and washed in a 1 per cent. solution of lysol and she is given a vaginal douche of lysol solution also.

When anesthetized, she is placed upon the operating-table in the lithotomy position, and the vagina is thoroughly scrubbed with a 1 per cent. solution of lysol and afterward irrigated with a solution of bichlorid, 1 to 2,000. A speculum is then inserted and a ligature is passed through each lip of the cervix and tied with a long loop, which is held by an assistant, usually the nurse, who also holds the speculum and who stands at the left of the operator. The cervix at the angle on one side (the left first) is seized with a tenaculum and the knife (shown in Fig. 1) is made to transfix the cervix on one side of the angle. This done, the tenaculum is loosened and reinserted in the lip near the lower border near where the line of denudation is to terminate on that side, and the knife is drawn forward, making the denudation with one stroke. The knife is again inserted at the angle on the some side of the cervix, but on the opposite flap, and it is denuded in the same manner. If the tissue to be removed remains attached at the angle, a few strokes upward with the other cutting edge of the knife severs it so it can be removed. The same thing is repeated on the other side.

In making the denudation the knife is held at such an angle that rather more tissue is taken from the inner than from the outer surface, so as to remove the ridge along the margin of the new canal of the cervix, which if left would prevent satisfactory coaptation of the flaps. In denuding with scissors this nearly always remains and must be carefully trimmed off afterward, considerable time being consumed in doing so. The sutures of silkworm gut are inserted by means

of the special curved needles described above, being threaded with a carrying thread. It is preferable to insert the outer or lower suture first, so as to get perfect coaptation of the edges of the flaps. The sutures are brought out on the margin of the new canal upon the mucous surface and not upon the denuded surface. As each suture is passed it is clamped by pressure forceps and handed to an assistant to hold. All the sutures on both sides (three on each side being usually sufficient) are inserted before any are tied. Then the flaps are separated, and they are thoroughly irrigated with a solution of bichlorid 1 to 2,000 or 1 per cent. solution of lysol. The sutures are tied from without inward, or from below upward, tying that at the angle last. The ends are cut about an half an inch from the knot, the vagina is washed out, and the patient is removed from the operating table to the bed. No dressing is applied to the cervix or vagina.

108 West 73d Street.

CIRCUMCISION NOT NECESSARY IN YOUNG CHILDREN.

Read in the Section on Diseases of Children, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY W. B. PARKS, M.D.

ATLANTA, GA.

I do not propose to discuss the theory offered by the laity and some doctors that circumcision is necessary from a sanitary standpoint, nor do I propose to criticise a Jewish custom or change a church ordinance, but I desire to show the etiology of a long or abnormal phimosed prepuce in male children. I desire also to show how this abnormal prepuce can be shortened without circumcision. We will first notice these long prepuces found in children. The cause can be found by the following examination: If we retract the prepuce as far as we can without using any violent manipulations, we find at the juncture of the mucous membrane with the true skin a constricted band that has at some time undergone an inflammatory process; this constricted band plays just in front of glans penis, the action of which pulls down and forward resulting in a mechanical action, lengthening the prepuce. This mechanical force that pulls downward and forward is very slight, yet, if we will remember how loose the true skin is that covers the whole organ, the least traction together with a little aid from gravitation is enough to make this long abnormal prepuce. What causes this constricted band which has at some time undergone an inflammatory process. No doubt it is caused from improper adjustment of the cloth or napkin that is constantly used on babies which is intended to keep them dry, but keeps them wet, ordinarily, with careless nurses. This napkin steeped in hot urine, with the little organ imbedded in its fold or pushed on either side with undue force will be quite sufficient to set up an irritation causing the ordinary adhesions of the prepuce to the glans penis and the constricted band.

Treatment without circumcision consists in the plans laid down in the standard works on diseases of children, Starr, Keating and others, which operation is dilating prepuce, breaking up the constricted band. Much care must be observed in dilating this constricted band. A small sized uterine dilator or ordinary dressing forceps is a very good improvised instrument, but the dilation must not be too rapid. You must dilate every second day and as much as the child can bear each time, leaving the instrument in the stretched prepuce from three to five minutes at each operation. If the operator should use rapid dilation he would find on the second day much inflammation, and, while waiting for the traumatism to subside the constricted band and phimosis would be aggravated and this is the reason why so many can not see what they accomplish by this dilating process. When you succeed in relieving this constriction in a dilated state, the prepuce will gradually shorten until it is in the normal position. To complete this operation it takes from twelve to fourteen days. I have used very successfully in the after-treatment, or when the adhesions are broken up, campho-phenique with equal parts of olive oil. I inject this under the prepuce with a common rubber ear syringe, lubricating and distending prepuce, at the same time allaying irritation and preventing a return of the adhesions.

This constricted band was brought to my notice in the treatment of a young man for the ordinary specific urethritis. After making the first prescription for him he passed from under my observation for about three weeks on his summer vacation. On his return instead of prepuce showing one-third of glans penis (which I noted when he applied for first treatment) it had elongated almost an inch. On attempting to retract the prepuce I found this constricted band at the juncture of the mucous membrane with true skin, and retraction was a physical impossibility. After waiting for the inflammation to subside I practiced this dilating process until band was broken up, and in a few days prepuce had retracted and, instead of showing one-third of glans penis, it showed fully two-thirds, convincing me that when we have an abnormally long phimosed prepuce there is an abnormal cause and this can be removed by a very simple operation. By relieving this condition without the knife yon save the patient from mutilation, besides you protect a gland for which nature has provided a covering. I saw an article in the *New York Medical Journal* a few years ago advancing this theory: That instead of having a congenital stricture of meatus it was caused from an exposed gland robbing it of its natural moisture that the gland secreted and, thereby atrophying the tissue, also contracting the caliber of meatus.

The following are a few of the fifty successful cases treated within the last two years:

Case 1.—A boy aged 10 years, long prepuce with adhesions. Commenced treatment July 3, 1894; broke up adhesions after inflammatory symptoms had subsided; practiced dilating process every second day. On the 14th day constricted band was completely broken up with no inflammatory action and could notice a perceptible shortening of prepuce. Saw patient twelve months after operation, prepuce had shortened to normal length.

Case 2.—A boy 4 years of age, long prepuce with adhesions with the usual nervous symptoms; broke up adhesions with considerable inflammation to prepuce, used distention of prepuce with carbolized oil for six days, commenced dilating six days after adhesions were broken up; dismissed patient eighteen days after first treatment without any noticeable shortening of prepuce. Saw patient at intervals from one to three months; at the expiration of one year prepuce was shortened to normal length. This patient, however, had one convulsion two months after operation.

Case 3.—A boy aged 5 years, long prepuce. Commenced treatment Aug. 2, 1894; broke up adhesions; removed considerable amount of smegma; commenced dilation second day after first operation; dilated every second day for fourteen treatments. Constricted band relieved. Saw patient one year afterward, prepuce normal length.

This operation will not at all apply to that class of

patients who have reached the age, or near the age of puberty, for in those cases, after the constricted band has been relieved by dilation, there is a redundancy of tissue that will not allow the shortening to take place. Hence all those cases which have passed the age of 10 to 15 years can not be treated by the plan herein outlined, unless of recent origin caused from acute inflammation.

DISCUSSION.

Dr. BELL—I would like the doctor to give us the means of dilating.

Dr. PARKS—The small uterine dilator or dressing forceps, or any forceps with which you can make gradual dilatation, will answer the purpose. After each dilatation and after the adhesions are broken up, I distend the prepuce with carbolized oil, which insures their non-return.

Dr. J. W. BYERS, Charlotte, N. C.—Is the infantile prepuce not normally very long and adherent?

Dr. PARKS—Always. The point brought out in the paper is that the constricting band is the cause of the long prepuce. By breaking up the adhesions and then dilating this band, you shorten the prepuce without circumcision.

EXAMINATION OF EYES IN THE PUBLIC SCHOOLS OF BALTIMORE.

Read in the Section on Ophthalmology, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY HERBERT HARLAN, M.D., AND HIRAM WOODS, JR., M.D.

BALTIMORE, MD.

The control and management of the public schools of Baltimore is in the hands of a board of twenty-three commissioners, one being elected by the city council from each ward, and the mayor, ex-officio. The city council must appropriate all the funds used by the board.

Early in the fall of 1895, a resolution was passed by this board to have the eyes of all children in the public schools examined by an oculist of recognized standing, provided such examination could be made without any expense. Later the matter was left in the hands of the committee on health, which committee was composed of three physicians. We were asked to consult with this committee as to what could best be done. As a result the following plan was adopted: First, to have the teachers instructed how to test the eyesight of all the children. Second, to have the eyes tested by the teachers and a blank (A) kept for each child showing the result of this testing each year. The blank to be transferred from grade to grade and school to school with the child. Third, whenever the vision was found to be below a certain standard or there were complaints of the head or eye pains produced by studying a notice was to be sent to the parents advising them to have the eyes examined by an oculist.

We expected by this means first, to have attention called to many unsuspected defects of vision. Second, to show by a glance at the record whether the vision grows worse in any case from year to year during the eight years of school life the Baltimore system contemplates. Third, possibly to show that there is a greater percentage of deterioration of eyesight in certain badly lighted and ventilated schools. Fourth, to have parents' attention called to defects in children's eyes and to have rest with them the responsibility for the proper care and treatment of the eyes.

In December the following circular and accompanying blanks and test cards were sent to the principals of all schools, and just afterward a meeting of the principals was called at which a practical demonstration was given of the method to be used in making the tests.

This plan was worked out in detail and submitted to the board and later our attention was called to an article by Dr. Allport, reprinted in the current number of the *Health Magazine*, from the paper published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, March 2, 1895.

The two plans are almost identical and it would seem that like circumstances, such as gratuitous services and large numbers of children, resulted in a similar evolution as the best that could be done under the circumstances.

The chief objection to the plan is having the examinations made by the teachers. This objection can be greatly lessened by some trouble taken to enlist their hearty coöperation and care in the wording of the instruction for making the tests.

So far as the children are concerned occasional mistakes are of little moment as in cases of defective vision, the work is reviewed by an oculist if the parents do their part. So far as the statistics obtained are concerned, while interesting, there should not be much reliance placed in them, but, inasmuch as that is our opinion of all statistics, they are presented for what they are worth.

The eyes of 53,333 pupils were tested. Of these a little over 43 per cent. were found to have 20–20 vision in each eye, and 39 per cent. additional as good as 20–30 in the better eye. Fifteen per cent. came between 20–30 and 20–200, and 303, or 0.56 per cent. had less than 20–200 in the better eye. The lowest percentage (35 per cent.) of normal eyes was found in the first or lowest grade, and the highest (56) in the eighth or highest grade. Three things are to be considered, however, in explanation of these figures. 1. Many children in the first grade know their letters very imperfectly and so get credit for much less vision than they really have. 2. These reports are based on tests made with the correcting glasses on, whenever children wore such glasses, and defects have been frequently discovered and corrected by the time children reach the higher grade, and 3, unquestionably many children fail in their examinations and leave school before reaching the higher grades, on account of defective vision.

The standard was fixed at vision as good as 20–30 in the better eye and no complaints of head or eye pains caused by studying. Bringing in subjective symptoms, especially when many children are prone to prevaricate, was objectionable but it was the only way to include low astigmatism and hypermetropia with normal visual acuity in the number referred to the physicians for further examination.

Now, as to the results. Many parents paid no attention to the notices and public sentiment is not yet far enough advanced to enable a school board to require a return certificate, and we will next year omit them from the notices sent to parents. The greatest defect is closely associated with the question of dispensary abuse. Baltimore has good schools and even the books are free, and the people with comparatively few exceptions expect everything connected with the schools to be also free. The result was that, notwithstanding the wording of the letter of advice, almost all the children were sent to the dispensaries. The

clinics were overcrowded and it was impossible to give the deserving poor the attention they ought to have had. This will be better another year when there will be fewer cases to be corrected and we will have the testing spread over eight or nine months.

Much good has been done, both in arousing general public interest in the question and in the direct benefit many children have received. Much greater good may be expected to accrue in the future.

TABLE SHOWING TOTAL RESULTS OF TESTS BY TEACHERS.

	GRADES.								
	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	Tot'l.
Number of pupils in each grade whose eyes have been tested . .	14,986	10,370	8,519	6,975	5,350	3,633	2,198	1,302	53,333
Number having 20-20 in each eye.	5,340	4,278	4,049	3,322	2,581	1,776	1,207	735	23,289
Number having less than 20-20 in *each* eye, but as much as 20-30 in *better* eye	6,982	4,322	3,071	2,503	1,808	1,197	660	401	20,944
Number having not 20-30, nor less than 20-200 in *better* eye .	2,624	1,700	1,342	1,094	909	628	293	158	8,248
Number having less than 20-200 in *better* eye. . .	40	69	54	40	37	26	35	4	303

The following circular was sent to each teacher:

OFFICE OF THE COMMISSIONERS OF PUBLIC SCHOOLS.

BALTIMORE, Oct. 29, 1895.

To Teachers:—At a meeting of the Board held on the 15th inst., the following resolutions were adopted:

Resolved, (1st), That the eyesight of all the children in the public schools shall be tested by the school teachers at the beginning of each school year (the work this year to be done as soon as practicable), and a record kept by which any deterioration which may take place may be noted from year to year.

Resolved, (2d) That the Committee on Health appoint two or more oculists of recognized standing (who shall serve without pay), whose duty it shall be to instruct the teachers in the proper methods of making said examinations and keeping said records, to fix proper standards of sight, and to make, from time to time, such reports and recommendations to said Committee as they may deem advisable, to the end that the children in the public schools of Baltimore shall receive the least possible injury to their eyesight during their school life.

Resolved, (3d), That said oculists shall be privileged to visit the schools when necessary, and also to examine any scholar's eyes.

Resolved, (4th), That the Committee on Health be empowered to prepare the necessary test cards, instructions and blanks for reports, and to do whatever in their judgment may be necessary to carry the resolutions into effect, and that the Committee on Printing have the necessary printing done.

This Committee has appointed Dr. Herbert Harlan and Dr. Hiram Woods the oculists contemplated in the above resolutions. The gentlemen named have suggested, and this Committee has approved, the test cards and blanks sent herewith, and the following instructions.

JAMES BOSLEY, M.D.,
M. B. BILLINGSLEA, M.D.,
D. W. SMITH, M.D.,
} Committee.

Instructions to teachers in reference to the examination of the eyes of the school children.

A blank (A) is to be filled out for each pupil. The utmost care must be taken that the tests for vision be accurate. The records must be arranged in alphabetical order and kept in the envelopes provided for that purpose.

When a pupil is transferred the record card must also be transferred.

The tests for vision are made in the following way: The pupil is placed with his back to the light and twenty feet away from the large distant vision card. This large card should be placed facing the pupil and in the best possible light.

One eye of the pupil is then covered, as with a card, and he is directed to spell the letters on the distant card. The vision of one eye being noted in the column for distant vision for the year, the other eye is tested and noted in the same way. The size of the letters is such that the largest one should be seen by a normal eye at 200 feet; the next in size at 100 feet; the next size at 70 feet, and so on down to the bottom row, which should be readily recognized at 20 feet.

The distant vision is expressed by a fraction, of which the numerator is the number of feet separating the pupil and the test card, and the denominator the size of the type seen at that distance. For example, if at the prescribed distance of 20 feet the bottom row of letters is read, the vision would be 20-20 or normal.

Suppose, however, only the next to the bottom can be seen that row ending in the figures 30, in that case the vision would only be 20-30. If only the line above that can be seen the vision is 20-40, and so on up the card, until if only the large letter at the top can be seen the vision is 20-200.

BLANK A. PUBLIC SCHOOLS OF BALTIMORE.

School No. .....

Name of Scholar, ...

Age, ... *Years; Sex*, ... *Color*, ...

Does he (or she) wear glasses? .....

		1895	1896	1897	1898	1899	1900	1901	1902
Distant vision without glasses,	right eye,								
	left "								
Distant vision with glasses worn,	right "								
	left "								
Nearest point to face fine print is read	right "								
	left "								
Farthest point from face fine print is read,	right "								
	left "								

Are there complaints of head or eye pains produced by studying? .....

Signature of Teacher Making the Examination.

1895	1899 .....
1896	1900 .....
1897	1901 .....
1898	1902 .....

PUBLIC SCHOOLS OF BALTIMORE.

BLANK B.

School No. .....

Baltimore 189

To Mr. .....

By examination, the sight of ..... *your son, daughter or ward, is found below the standard necessary for safe performance of school work. You are advised to have the eyes examined by an Oculist. If you are unable to pay for such examination, you may have it done at one of the Eye Hospitals.*

Take this certificate with you, have it filled out by whoever makes the examination, and return to me promptly.

Respectfully,

Principal.

I have examined the eyes of ..... *A. No.* .....

With correcting glasses distant vision is R. E., ... *L. E.* ..... *In my opinion* ..... *can safely perform ordinary school duties.*

M.D., Examiner.

Residence .....

Baltimore, ... *189*

Blanks A. and B.

Some cases will be found where no letter can be made out at the distance of 20 feet. In this case the pupil must go slowly nearer to the letters, still keeping the eye not under examination carefully covered until it is found what is the greatest distance at which the largest letter can be recognized. Suppose a case where this can only be done at a distance of 15 feet, or perhaps 7 feet, the vision would then be only 15-200 or 7-200.

The test for near vision or reading is simpler. It is merely to note approximately in inches the nearest point to the eye and the farthest point from the eye the small letters or words on the near vision card can be made out.

In the distant vision test only that row of letters of which the whole row can be correctly made out is to be counted.

In the case of those pupils having normal vision, or who do not complain of constant headache, or eye pain, or inability to use the eyes for studying, the records are to be kept for the purpose of noticing if there be any deterioration of the eyes from year to year.

In the case of those pupils whose vision in the better eye is below 20-30, or who complain of headaches or eye pain, blank B is to be filled out by the principals of the various schools and sent to the parent or guardian of the pupil in question.

In case no attention is paid by parent or guardian to these notices after two weeks, the records of those cases are to be sent by the principals to the oculists of the board for their examination and consideration.

In making the tests two sources of error are to be specially guarded against: First, pretended inability to see, and second, a learning of the letters and their repetition by rote. The latter can generally be overcome by requiring that the letters be named from right to left or in irregular rotation.

DISCUSSION.

Dr. B. A. RANDALL, Philadelphia—While urging a more precise and exhaustive study of school eyes, if possible, in the report of the committee of last year, the doing of such work as this was commended as a forward step, far better than nothing, and better than much that had been previously done. The only fair criticism is, that as the medical examination of those found to be defective was not made at the school, many did not seek it and many more were neglected in the crowded clinics, but it is almost sure that the future results will be better and will create gradually the needed public opinion and pave the way to more ideal investigations.

Dr. H. B. YOUNG, Burlington, Iowa—It embodies the idea which I maintained in my contribution, and not included in the report of the committee last year, the greatest good for the greatest number.

Dr. F. ALLPORT, Minneapolis, Minn.—I am sure that Dr. Harlan and I both feel that Dr. Randall's plan is undoubtedly the best to be pursued because we should be satisfied with nothing less than perfection, but we are working in a practical line with the hopes that we will later be able to get what we want, while now we are compelled to take what we can get.

Dr. HERBERT HARLAN, Baltimore—We claim no priority for the plan and well know it is not perfect, but it is practical, has been put in operation and has already done much good.

THE COÖRDINATIONS OF THE OCULAR MUSCLES.

Read in the Section on Ophthalmology, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY C. M. HOBBY, M.D.

IOWA CITY, IOWA.

When two or more muscles act together for a common purpose, their movements are coördinated; but the term coördination is more commonly applied to the similar, but more complex function, whereby two or more members of the body are acted upon, by the muscles or groups of muscles moving them, to the execution of a common purpose. In this sense the movements may be simultaneous or successive; the objective, instantaneous, consecutive, or continuous. The chain of ideation, will, action, is the same as in a simple voluntary movement, only complicated by the necessity that the different actions should accomplish a single purpose. As certain movements occur from birth, and are therefore called instinctive, it has been supposed that certain other movements which require coördination must also be instinctive; but this is not to be accepted without demonstration. While the limits of this paper do not allow more than a statement of the fundamental principles which have been demonstrated in reference to the coördination of the external eye muscles; it may be premised that no hypothesis in regard to such coördination should be considered which is not in harmony with what is known of comparative anatomy and physiology, as well as human anatomy and physiology.

Paley defines instinct as "a propensity prior to experience and independent of instruction." The coördination of movements in suckling and in winking, are the instinctive coördinations exhibited by the human infant; associated movements of the eyes, arms and legs are observed also, but they are devoid of purpose, and are imperfect examples of coördination.

Without considering, at present, the influence of inherited habit in establishing coördinations, we know that the child, by experience, acquires control of the various muscles and learns to walk, a consecutive coördination of high grade, learns to use hands, and usually one better than the other; and by experience and long continued practice may learn to use both hands separately for a common purpose, as is especially illustrated by the rapid co-incident and consecutive movements of a great number of muscles of both hands, arms and legs.

We note in all these coördinations certain facts important to the consideration of the present subject. Not all persons possess the same facility in acquiring high grades of coördinative power; some engineers can, by long practice, train their steps to an approximately equal length; they can measure distance by pacing to an accuracy 98, 99, or 99½ per cent., others can never attain above 95 per cent., and the same is noticed among musicians; proficiency is the result of continual practice. There are differences between individuals in the quality of the work, and between the quality of the work, of the same individual, at different times. Disuse of the practice of coördination for a considerable time, diminishes its accuracy; examples of this are on every hand.

We can say of muscular coördinations in general, that they are acquired by practice, improved by repetition, and fluctuate in quality, independent of disease; they may, under favorable conditions, approach closely to perfection, but are always approximations.

We have no reason to consider the coördinations of the ocular muscles as different in any respect from the coördinations of the voluntary muscles in general.

The purpose of ordinary ocular coördination is to so move the globe of both eyes that the mind may interpret the retinal images singly; and this implies that one eye is directed so that the image of a particular part of the field of view falls upon the fovea, or place of fixation of the retina; and the other eye either simultaneously or successively is similarly directed, so that the image of the same particular part of the field of view falls near or upon the corresponding place in the second eye. It will be noted that the word "point" has not been used either in regard to the field of view, or in connection with the place of fixation; because the mathematical definition of the word, as ordinarily used in physiologic optics, would lead to inferences not intended. The so-called point of fixation is an area of considerable magnitude. The subject of binocular vision is too comprehensive to be taken up here, but some consideration of the compar-

ative physiology of vision, and of the method, use and value of so-called binocular vision will be required, especially as many modern text books ignore the profound work of the early physiologists.

What we see, is the interpretation the mind puts upon retinal stimulation; so-called optic illusions are mental deceptions. Binocular vision as it exists in man, is of doubtful existence in any of the inferior orders except the quadrumana. It is probable that in the inferior orders of mammalia a more effective peripheral and less effective central vision exists. The dog and the horse, for example, possess poor central vision, and they use the peripheral portions of the field nearly, if not quite, as well as the central.

In some of the orders no attempt at fixation is made. From an evolutionary point of view, binocular fixation was a late acquisition.

The habit of fixing an object with both eyes is not instinctive in the case of the human infant, and is not acquired until several weeks have passed, and then only near objects are transitorily fixed. Some birds, and some fishes, possess very acute monocular vision, and the fallacy that binocular vision was essential to the estimation of distance, shape and size of objects, was long ago pointed out, and illustrated by the marvelous acuteness of such estimations by birds of prey, that only possess monocular vision. Men with one eye easily acquire capability of estimating distance. In fact our estimate of distance depends upon our familiarity with the surrounding objects. Neither is the stereoscopic vision, or the appearance of relief produced by looking at two pictures on a plane surface through a stereoscope, a function of binocular vision altogether; the fusion of two parts of separate pictures into a common mental impression necessarily requires both eyes, but the appearance of relief on a plane surface can be produced with one eye.

The mental fusion of the retinal images of the two eyes is not the mixture of two impressions; it is either, mentally, when much displaced centrally, two different impressions, or it is a single mental impression taking varying characteristics from the two images; as the mind is directed to one, the other, or both. For example, using different colored glasses before the eyes, the mind does not recognize an equal mixture of the colors as the combined impression, but may recognize either of the colors alone or either tinted with the other. Nor were the old observers altogether wrong, who thought that the mind was affected alternately by the two retinal images; this is sometimes demonstrable.

So far as binocular vision is concerned it introduces no addition function, but augments the power of monocular vision and amplifies the peripheral field of view. Ordinarily in a healthy individual with normal eyes, the practice of binocular coördination is very accurate, and it must be noted that no sets of muscles are so frequently and continuously employed, from the earliest period of life, as the muscles that move and direct the eyes. Yet if a healthy individual looks at a star, with a card before one eye, when the card is withdrawn a movement of the star will appear to him, and this movement he can readily determine is due to the adjustment of the covered eye to the direction primarily fixing the object. There is an instant of diplopia while the error in pointing is being corrected. So long as the individual is able, with both eyes open, and without extraneous assistance, to so direct them that the mind accepts the two retinal images as a single communication we can say that there is coördination; when, however, the two eyes can not be brought into a common fixation, there is incoördination.

But while coördination may take place, it is possible for it to lack that high degree of perfection which we find, usually, in those who have perfect and easy vision, and these difficulties of coördination have been considered one of the sources of uncomfortable vision or asthenopia. Without accepting as demonstrated the significance implied by the various terms introduced by Dr. Stevens, the nomenclature of the deviations from perfect coördination, when the natural incentive is removed, is so convenient that it may be used in discussing the different phenomena in connection with coördination. We can say, therefore, that slight amounts of the so-called heterophoria are almost universal, and we find that from 6 to 8 degrees of exophoria and from 4 to 6 degrees of esophoria are compatible with normal coördinative power and ease of vision. As the whole practice of the ocular muscles is normally exerted in the planes passing through the optic centers of both eyes, but little deviation in a vertical direction is found in the movements of a normal eye; excepting under pathologic conditions rarely more than from 15 to 30 minutes of arc. When a card is held before one eye and the other is directed at a distant object the covered eye is normally directed toward the same object, but not necessarily directly at it. The angle the visual line of the covered eye makes with the visual line when the eye is uncovered, is called the angle of heterophoria, and is measured out or in from the vertical, and above or below the horizontal. It is easily seen that if the mind be able to direct the two eyes to a common point, when both are in action, the conditions for binocular vision are fulfilled. It has been claimed, however, that if the eyes were not directed to a common point, as well when one was covered, or when the natural incentive or stimulus to action was interfered with, as when both were at liberty, that the condition was an abnormal one, and that such deviations were the cause of many varieties of asthenopia. This brings us to the consideration of the relation of these apparent difficulties of coördination to asthenopic conditions. While convinced by repeated experiments and the observation of a considerable number of patients, that accuracy of coördination when one eye is covered or obstructed, as with the Maddox rod, prism or the phorometer, is not essential to ease of vision, it very frequently happens that asthenopia and difficult or imperfect coördination are coincident. If we examine the conditions in which heterophoria is found, we can assign as possible causes producing the so-called muscular asthenopia, such general diseases as produce enfeeblement of the muscles generally, and such forms of cerebral and spinal lesions as are capable of producing ataxic phenomena in other parts; also neurasthenic conditions, which render irregular, or enfeeble or make uncertain, the ordinary muscular actions; or which are accompanied by extraordinary manifestations in muscular control, or impaired continuity of action. We must consider also chorea and the allied disturbances of the nervous and muscular systems. Then we have the influence of ametropia, and especially of astigmatism, in producing demands for irregular and uncertain accommodation and convergence.

Very important is the influence of misdirected experience, such as the habit of using one eye,

whether congenital or acquired, or the result of forced monocular work in watchmaking, microscopy, the use of the transit, etc. In this connection, the habit of sitting obliquely at the desk in studying or writing, the consecutive succession of movements in copying from one book to another, as in the case of book keepers, and the copying from manuscript of typewriters. These conditions lead to excess of action of certain muscles, and a habit of use in directions away from the straight forward line which our methods of measurement assume as the normal.

Again, the individual who has had a long rest from books and close work may find great difficulty after a few years in resuming continuous application of vision to a book; and the asthenopia that comes on after resuming the steady use of accommodation and convergence may present all the painful symptoms of muscular asthenopia, with the least possible amount of muscular insufficiency, when tested in the morning, and with considerable after the day's work.

In testing these cases by the phorometer, the Maddox rod, or by the more efficient means of using in a dark room a colored glass dense enough to cut off all vision of other objects than a small light and leaves no inducement for the will to direct the eye; deviations from coincidence of the visual axes can be easily shown in the majority, and lack of spontaneous coincidence may be found in one or both eyes, and the apparent insufficiency can be located, sometimes in special muscles. But as stated before, a considerable amount of uncertainty of direction, when the natural guide of complete similar retinal images is wanting, may be compatible with perfect ease of work.

Excepting that they are weakened by disease or disuse, we can ascertain very little about the actual strength of the ocular muscles; we have no means of measuring the energy used in their contraction. The prism in no sense weights the muscle; by changing the angle at which an object is seen it introduces an obstruction to coördinative impulse, requiring readjustment to secure binocular vision, but it can not measure the energy used in contracting a muscle. Nor can we say, when we find an exophoria by our tests, of say 6 degrees, whether it is because the external pull is stronger than the internal, or whether the mind awaits the visual stimulus before directing action. So while we may have a great amount of assurance that all of these failures, in directing the axis of the covered eye, are to be considered rather as failures to look straight than "tendencies to look wrong"; and while it may be doubted if those failures in direction, which are so promptly rectified when the eye is brought under the domination of the will, are to be considered any more pathologic than the obstinate muscles of the back and legs that deny the would-be bicyclist, in his early trial, the assurance of equilibrium in the saddle; still the indications of heterophoria are not to be neglected in the careful study of muscular asthenopia. And whether they are pathologic or not, whether they cause asthenopia, are one of the symptoms resulting from a common general cause, or are of no significance whatever, there can be no doubt that back of all muscular insufficiency and difficult coördinations it is necessary to look for the source of the disturbance, and we may feel reasonably sure that while muscles may be enfeebled by disease or disuse, we shall rarely find failure of coördinative power resulting from abnormal increase of strength.

DISCUSSION.

Dr. C. W. KOLLOCK, Charleston, S. C.—It has been my custom to prescribe the glass best adapted for the case and if there was insufficiency afterward to hunt for the cause of the trouble in the general health before prescribing prisms or cutting the muscles.

Dr. G. C. SAVAGE, Nashville—I believe that the lower animals see just as men see as to direction. The acutest vision is when the image is the sharpest. We know how quickly the horse shys when it gets only a side view of an object, but goes properly the instant its head is turned straight toward it. When a dog chases a rabbit he fixes his eyes straight upon it. Watch two roosters fighting, they do not turn their heads side to side, but each is looking straight at the other. So I see no reason for believing that animals have better vision peripherally than centrally. There is such a thing as muscle coördination in muscle weakness. I think orthophoria is a normal condition. If that is so exophoria is abnormal. We may have exophoria of several degrees which may not excite trouble until the nervous system is in an abnormal condition, but while it may not give trouble it is always a sort of menace.

Dr. D. S. REYNOLDS, Louisville—I wish to correct a statement of Dr. Savage's. I have seen cock fights and have noticed that the roosters always turn their heads to one side and use their eyes separately.

Dr. C. M. HOBBY, Iowa City—The anatomic structure of the retina of a man is as much superior to that of the dog as the retina of the eagle is to the eye of man. The assumption that if a covered eye does not follow its fellow it is abnormal is not well founded, neither is the assumption of the identical points of the retina. A difference of size of retinal images of 10 per cent. is compatible with mental association.

ON CERTAIN SUBJECTIVE VISUAL SENSATIONS.

Read in the Section on Ophthalmology, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY ALEX. W. STIRLING, M.D., C.M. (EDIN.); D.P.H. (LOND.)

ATLANTA, GA.

I recently received from a committee of the Ophthalmological Society of Great Britain a request, tendered no doubt to all its members, for such observations on the visual sensations of epilepsy or migraine as I might be willing to record from my experience or practice. Interest in this matter had been specially developed by a lecture delivered before that society by Dr. W. R. Gowers, in which he had demonstrated the importance of these symptoms, not only in relation to the possible light which they may throw upon the true nature of these diseases, but also in connection with the anatomy and physiology of the still imperfectly understood centers for vision.

Fortunately for me, I am unable to record any personal experiences of those maladies which are most desired by the society, but I am able to describe them as related by a number of my patients. This will serve to illustrate the points of chief importance to ophthalmologists.

Such an experience, "though unreal, the subject of it is," as Gowers says, "as a sensation, a profound reality, which confuses the mind and may make even recollection painful. Hence the opportunities for ascertaining trustworthy facts are very rare, and when they come it is important that they should be made the most of." I venture, therefore, to bring before you some of these, partly for their own sake, and also because possibly by so doing some of the

members of the AMERICAN MEDICAL ASSOCIATION may be stimulated either to forward the wishes of the British Society or to form a collection for themselves.

I shall choose, as a type with which others may be compared, the case of a professional man, whose usefulness has been considerably impaired by migrainous attacks, dealing however, for the sake of time, almost solely with his visual experiences.

The attacks were of the following character: First came the spectra lasting some half hour, during which time voices sounded metallic and far away, and before their withdrawal pain began, especially behind the eyeball of the side opposite to that on which the field appeared to be affected, *i. e.*, in the cerebral hemisphere in which the pathologic process was going forward, but also piercing through from one temple to the other and continuing for perhaps twelve hours. The pupil on the side of the hemisphere involved was dilated to twice the size of the other, due, no doubt, to irritation of the sympathetic. While the pain remained, and afterwards for many hours, his mental faculties were dulled. He never vomited and had slight nausea only at the outset.

The spectra were of the following description: They might be divided into two kinds, one of which, by far the more common, was succeeded by headache, and the other, which the patient had experienced only some half dozen times and not at all during recent years, was of a different aspect and was unassociated with either headache or nausea.

The more usual type affected the left field of vision in about nine-tenths of the attacks, the first warning of which consisted generally in a sudden blank of small dimensions, on one side midway between center and periphery. This increased in size until it had blotted out the whole or part of the half field. Sometimes, in the early stage, when looking at a small object, the blindness seemed to be, as the patient expressed it, "trying to get hold," with the result that the object would be momentarily completely hidden from view (the fixation point being completely involved), then entirely visible, then hidden on one side alone, and so on until the cloud had settled down on some particular part of the field, generally in the middle zone.

In the course of a few minutes the blank was modified by the appearance of a bright silvery shimmer, more like sunshine on the gently rippling surface of a pond than anything else the patient can imagine, but having a definite form, a crescent, often confined to one quadrant of the field, concentric with the center and outlined on the convexity by zigzag lines in which no other colors were to be distinguished than the silvery sheen, while the lines forming the zigzags were generally longest in the middle of the curve and shortest at the ends, though he had seen them longest at one extremity, lying in the upper area of the field and crossing over the hemiopic line. They never trespassed on the central area of the field. This patient had also seen the spectrum lying as a curve horizontally above the level of the fixation point and reaching therefore into the second half field.

The spectrum, which he has also likened to an incandescent electric light, and which was on one occasion composed, except the angled outline, of bright spots in rapid motion, after from ten to twenty minutes appeared to burn itself out, leaving a blank which most frequently, in the patient's own language, "affected the whole vision;" about as frequently, however, central vision remained, the part of an object looked at being visible while all surrounding it was dark. At the expiration of two or three minutes the fog was dissipated from the center, though the sight continued impaired for some time afterward. The acute visual symptoms lasted, on an average, perhaps ome thirty minutes.

The second form of this patient's attacks consisted in a dark spot which appeared on the outside always, he thinks, of the visual field, over which it moved so as to involve at times the center and parts beyond it, lasted only about a minute, and was associated with no other symptom.

All cases do not correspond with the foregoing description. For instance, in another of my cases the spectrum formed an angled, silvery line in the middle zone, apparently an inch in length, lying horizontally on one side and pointing to the center, but never reaching it or entering the other half field, with sometimes a second similar line nearly but not quite joining the peripheral end of the first at an angle of about 50 or 60 degrees. Occasionally, and always as the signal of a specially severe succeeding headache, this spectrum was followed, or was altogether replaced, by a dark spot the size of half a dollar, below the fixation point, which, when the patient looked at a friend's nose, cut off from view the mouth and chin, affecting therefore a part of both half fields of vision.

In another patient, whose existence had been greatly embittered for many years by migraine, and in whom a large patch of the frequently associated xanthelasma occupied the inner end of both upper eyelids, zigzag or "fortification" colored spectra were associated with more complex figures, especially faces and forms of animals. Gowers has never found such complex spectra with migraine, though they are not uncommon in epilepsy. This patient is not a woman of high intellect and I have never been able to receive from her such a description of the angled spectra as I would care to transfer to paper, but her attacks appear to be pure migraine and, so far as I can understand, neither epilepsy nor hysteria, and there is no doubt about the deriding negro faces which she sees.

Gowers has described six varieties of spectra, and has presented to the British Ophthalmological Society at least three sets of painting or drawings of some of these as a nucleus for a fuller collection, to which he hopes that others will contribute. One of these is a second series by Dr. Airy, to whom the profession was already chiefly indebted for reliable descriptions of the spectra. Time is insufficient for the discussion of these here, yet one may draw attention to the peculiar fact noted by Gowers, and exemplified in my cases, that the position of most physiologic activity, the position of central vision, where one might expect excessive action, apparent as colored spectra, is in reality free from these, and also that the zigzag lines diminish in length as they approach it, while it is subject, on the other hand, to inhibition, appearing as a cloud or darkness. The lightening-like outline of the spectra is also worthy of note, and probably has radical connection with the physiology of discharge in the cerebral cells.

Gowers has considered epilepsy also. I have no such cases to record, but although the duration of the spectra in it is comparatively short, epilepsy and migraine have features in common and connecting forms. A marked difference lies in the more

complex nature of the spectra already referred to as not infrequent in epilepsy, a feature, according to Gowers, never found in migraine.

There can be no doubt that these spectra originate in the brain rather than in the eye, although it is not contended that ocular refractive or muscular abnormalities may not at times be the exciting cause of an attack. They are associated in some patients with other cerebral symptoms, with similar affections of other nerves of special, as well as of common sensation and of motion. Besides, as ocular symptoms they are not explicable by our knowledge of the anatomy and physiology of the eye; ophthalmoscopic examination during attacks has not revealed conditions which would account for them, and the fact that the spectra move along with the eyes is, of course, no argument.

Certain of the features of these spectra require consideration in connection with the views generally held concerning the centers of vision in the brain. These are usually said to be in the cuneus, in the occipital lobe, and in the superior and inferior occipito-temporal convolutions, and partial or complete disease of these on one side produces partial or complete homonymous hemianopsia of the opposite side, involving sometimes the whole or part of the macula and sometimes leaving it intact. But these spectra, as Gowers has pointed out, suggest the participation of something distinct from these occipital centers. Discharge or inhibition taking place in them would not produce a picture such as is here exhibited. If unilateral, the sensations would be confined to one-half of the visual field; if bilateral, one would expect rather either a double visual manifestation, or at least one affecting more distinctly and separately each half field, than is shown by the practically constant appearance of the spectrum on one side, though not necessarily observing the hemiopic line, but passing, to some extent, into the opposite.

To explain this and other symptoms of these and other diseases, Gowers has been compelled to postulate the presence of the higher visual centers in the angular convolution of which Ferrier had already obtained indications by experiment, but concerning this work, which may be accelerated by a sufficient number of observations on such cases, has still to be accomplished before their nature is completely understood. He surmises that the visual nerve fibers are so arranged after leaving the lower centers in the occipital lobe, that both sides of each eye are represented in each of the higher centers. The exact manner of their distribution is still a matter of uncertainty, but in each higher center the opposite eye appears to have the more important representation, while the higher centers in the two hemispheres have apparently so intimate a connection that the one seems able to compensate for loss of function of the other, a feature altogether absent from the lower centers. The higher also differ from the lower in that, while in the latter partial disease produces a corresponding partial loss in the related half field, partial disease of the former lowers the function of the whole in a manner not yet understood.

The following facts indicate the presence of these higher centers: In the hemianesthesia of hysteria there is arrest of the functions of the other higher special sense centers in one hemisphere, but never the hemianopia which results from disease of the lower center. Instead, there is "crossed amblyopia," *i. e.*, loss of vision in both eyes, except in a small central area of the opposite eye and a larger central area of that on the same side, and without relation to the half fields. This indication is confirmed by organic disease due to hemorrhage in one hemisphere and by disease located in the region of the angular convolution. When hemianopia does result from disease in a cerebral hemisphere, the remaining half fields are also affected, that of the opposite side being the more

I remember, I remember, the house where I was born;
The little window where the sun came peeping in at morn.
He never came a wink too soon, nor brought too long a day,
But now I often wish the night
borne my life away.
I remember, I remember the fir
s dark and high;
I used to think their very tops were close against the sky
It was inchildish innocence, but now 'tis little joy
To know I'm farther off from Heaven than when I was a boy.
2
I remember, I remember the house where I was born.
The little window where the sun came peeping in at morn.
He never came a wink too soon;
brought too long a day.
But now i often wish the nig
borne my life away.---
I remember, I remember the fir
ees, dark and high;
I used to think their very tops were close against the sky
It was a chindish innocence but now 'tis little joy,
To know I'm farther off from heaven than when I was a boy.
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I remember, I remember the house where I was born
The little window where the
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He never came a wink too
too long a day,
But now I often wish the
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I remember, I remember the
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I used to think their very
close against the sky
It was in childish innocence but now 'tis little joy,
To know I'm farther off from heaven than when I was a boy.
4
I remember, I remember the house where I was born;
The little window where
peeping in at morn.
He never came a wink too
nor brought too long a day,
But now I often wish
borne my life away.
I remember, I rememb
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I used to think thei
were close against the sky
It was in childish
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5
oo soon
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F.P.

O—Fixation point. X—Occasional position of fixation point.

STAGES.—1, a blank; 2, a blank; 3, outline now silvery; 4, outline still silvery; 5, central vision intact, peripheral clouded by thick fog; 6, silvery speculum, in another patient

contracted. The presence of these higher centers, Gowers has found to be still farther confirmed by the manner in which they explain certain pathologic facts found otherwise inexplicable, and their necessity for the hypothesis of their presence coincides remarkably with the experimental results obtained by Ferrier. The remaining bilateral central sensibility of the retina in the one-sided functional and organic lesions just referred to illustrates the relationship of each higher center to the two eyes.

With loss of the higher center, say in the left hemisphere, we have loss of all vision in the right eye, except in a small central area supplied by the right hemisphere, along with loss of vision in the left eye, except in a central area larger than that in the right, and also supplied by the right hemisphere. Vision is lost in the periphery because both higher centers are required for its fulfilment, one being unable to carry on its functions in either eye. Here we may recall the final stage of the spectra in the case which I have fully reported, in which the periphery of both eyes was blind, the central region being sensitive.

The above facts being beyond dispute, Gowers has explained the relationship of the peripheral fields in the two eyes by the theory that when the peripheral visual fibers from the lower center pass to the higher center of the opposite side, they do so by traversing the higher center of the same side, and are therefore involved in disease of either higher center. Each higher center thus containing fibers from the complete periphery of both eyes, an interference with one higher center is sufficient to annul the functions of the complete periphery of both eyes. This theory may or may not be correct, but the bilateral spectra, as illustrated by the cases presented, seem to show a close connection between the visual centers in the two hemispheres, or even that they act almost as one center.

It is interesting to observe here the curious fact noted by Gowers, that the field for color in every area, even in the temporal where the color is seen by one eye alone, is larger when both eyes are open than when one is closed, and farther that "there is a remarkable extension of each areal color field if a small white area is in the central region, and that this extension is almost the same if it is opposite" the one eye only, the other being under examination, though it is greatest where the white area is opposite both eyes.

These demonstrations of the fact that increased stimulation of the retina of either eye produces increase in the area of the periphery sensitive to color in the other eye, supports the theory of the close connection between the two higher visual centers, brought out also by the blindness of the periphery of both eyes on interference with the functions of only one higher center.

DISCUSSION.

Dr. C. W. KOLLOCK, Charleston—I have had some experience with these visual sensations. They have always been traced to indigestion. My first recollection of it was some years ago, when it affected one eye only, beginning with haziness of vision and then the waves appear. At times they appear in the outer fields of both eyes at the same time. The wave passes across the field of vision and goes away at the upper angle of the orbit. Once only did I notice them begin in the center of the field. The attacks last about fifteen minutes.

TREATMENT OF OPTIC NERVE ATROPHY BY MERCURIAL INUNCTIONS IN CONJUNCTION WITH THE HOT BATHS OF THE HOT SPRINGS OF ARKANSAS.

Read in the Section on Ophthalmology at the Forty-seventh Annual Meeting of the American Medical Association held at Atlanta, Ga., May 5-8, 1896.

BY O. J. SHORT, M.D.

HOT SPRINGS, ARK.

It is not the object of this paper to consider the different pathologic conditions found in optic nerve atrophy, but to give my experience in the treatment of this condition, no matter what the etiology, by the use of mercurial inunctions of ungt. hydrarg. U. S. P. in conjunction with the baths of the Hot Springs of Arkansas.

I have selected from my records five cases, each arising from a different cause. The mode of treatment pursued is practically the same in each, only varying the conditions and circumstances as indicated. For fear there may be some question as to the correct diagnoses I will state that in each case a like diagnosis was made by at least two oculists, men of unquestionable ability and in most instances members of this society.

Case 1.—Mr. C. C. O., aged 39, referred to me in May, 1893. On examination I found a gray atrophied condition of both optic nerves. I could find neither specific, spinal, nor any other cause to which we could attach the blame. In his history he stated that his mother became partially blind soon after giving him birth and remained so until her death. The opinion of the attending physicians was that the blindness was due to childbirth.

His vision, in right eye, could count fingers at two feet if in good light; in left eye, 20-200. He was ordered mercurial inunctions of 1 dram each night applied to the back and spine, and in addition to take a tub bath of ten minutes at a temperature of 98 degrees F.; at same time to observe all necessary hygienic precautions. On the tenth day symptoms of mercury were manifest in the mouth, on the gums and fauces. The vision was the same as at previous examination. At this visit he was ordered to use the inunctions every second night; increase the baths to 99 degrees F., and fifteen minutes duration, and in addition to apply a douche, 110 degrees F. to the spine and a vapor bath of three minutes. For the benefit of those not familiar with these baths, I will explain. The vapor bath is in a room three by four feet which is full of steam, 130 to 140 degrees F., continually rising through the open slat floor from a stream of hot water which flows underneath. On the twentieth day examination showed no sign of improvement in the vision of the right eye; while in the left eye it was 20-100. The inunctions were discontinued and he was placed upon kali iod. sat. sol. three times a day, commencing with 10 drops and increasing 3 drops each dose, until 60 drops were reached, which was continued until the thirtieth day, when examination revealed no improvement in vision of right eye; in left 20-100 minus. He was ordered to discontinue the kali iod. and to resume the inunctions alternate nights and to continue the baths as before, at the same time I began the use of hypodermic injections of strych. nit. in the region of the seventh cervical vertebra, beginning with 1-40 grain and gradually increasing to $\frac{1}{4}$ grain; toxic symptoms of the strychnia began to manifest themselves and its use was discontinued by gradually decreasing the dose. On the fiftieth day, still no change in vision of right eye; left eye 20-60. He was instructed to use the inunctions as before. On the sixtieth day no change in right eye; left eye 20-50. The patient decided to locate in Hot Springs. Although he has been under my care since and I have experimented with almost everything, there has been no change in his condition since the end of the third month.

Case 2.—A young lady aged 14. Referred to me June, 1894. Her father gave history of syphilis contracted five years before marriage and seven years before the birth of this daughter. The patient had always been healthy except the trouble with her eyes. Her sight began to fail about nine months previous to this consultation. My diagnosis was optic nerve atrophy due to inherited syphilis. I found the vision in right eye, 20-100; in left eye 20-150. She was promptly placed upon the mercurial inunctions, in conjunction with the hot baths, and at the end of the first week upon kali iod. in addition, and instructed to report to me once a week for examination. She improved rapidly from the first and at the end of the second month her vision in both eyes had returned to normal for the central, while the extreme outer fields seemed smoky or blurred. She was discharged and I received a letter some months later from her father saying that she was attending college and that her eyes gave her no trouble.

Case 3.—Mr. G. A. H., age 47, consulted me in November, 1894. He told me that he had gray atrophy of the optic nerve and said he was getting worse all the time, although he had been under the treatment of a prominent oculist since the previous May, and that he had taken mercury pills until he was salivated and potash by the pound.

Examination showed atrophy of both optic nerves, with

vision in right eye 20-500; left eye 20-200. I could find no cause except that in March previous while on a railroad train, a steam heater burst, causing him to be unconscious for twelve hours and laying open his abdomen, in right iliac region, for four or five inches, allowing the intestines to protrude. This was properly attended to at the time and he made a good recovery and has felt no bad effects from it since. He noticed that his vision began to fail in May following, when he immediately consulted an oculist and had been under constant treatment since with the above results. He was ordered to begin the inunctions of mercury, 1 dram each night, applied to his back and spine, and to take a bath of 98 degrees F.; this was continued, with interruptions as the necessities of his physical condition demanded. The progress of the disease was almost immediately arrested and he claims he could see better at the end of the second week, but this I failed to verify by actual tests. At the end of the third month I could find no improvement in his vision, although he persisted in saying he could see better. He was then advised that he could gain nothing by remaining longer at the Springs at that time. He resumed his duties on the road until the following June, when he again consulted me; I found his vision the same as when he left. He was again put upon the inunctions and baths. In twenty-one days his vision improved to, for right eye 20-400; left eye 20-100. Although he has taken two courses of treatment since, there has been no change in his vision.

Case 4.—Mr. T. P. M., consulted me in June, 1895. He had been poisoned by lead fourteen months previously. His vision began to fail a month later, when he consulted an oculist who treated him for several months, and as he continued to grow worse he went to Denver where he was told he had optic nerve atrophy, due to lead poisoning and advised to visit the Hot Springs for the baths. On examination I found an atrophied condition of both optic nerves with vision in right eye 20-80; in left eye 20-300. He was instructed to begin the use of the mercurial inunctions, and in addition to take a bath of ten minutes at a temperature of 98 F. On the eleventh day toxic effects of mercury were noticed; the inunctions were ordered every third day. In addition he was put upon kali iod. beginning with 10 drops and increasing 3 drops each dose, and ordered vapor baths. This treatment was continued until he was taking 300 grains of kali iod. three times a day, when symptoms of iodism presented and its use was discontinued by decreasing 10 drops per dose. He was then ordered ten baths without the use of any medicine and dismissed at the end of the twelfth week. His vision began to improve during the second week; final examination showed right eye 20-40; left eye 20-200. He is still using the unctions of mercury two or three times a week and writes me that his vision is improving.

Case 5.—Mr. W. T. R., referred to me in December, 1895. He gave history of syphilis contracted twenty years ago. His sight began to fail two years ago and he had been under the treatment of an oculist. On examination I found a dirty gray atrophied condition of both optic nerves, accompanied by Argyll Robertson pupil, ataxic gait, and knee reflexes in right knee entirely gone; in left greatly diminished. Vision of right eye 20-800; left eye only light perception. He was placed upon mercurial inunctions together with the hot baths. He insisted that he was getting worse both in vision and gait until the eighth day when he reported that he could walk much better and could tell the time of day by his watch, which I verified. The reflexes had slightly improved. His ataxia has continued to improve up to the present time, March 1, 1896, with a vision in right eye of 20-500; left eye no change.

My conclusions, based upon my observation of forty-one cases treated since residing in Hot Springs are:

1. That in those cases having only light perception, treatment is of no avail; but where there is any vision left, that the progress can be checked, and if the vision has not gone below 20-200, unless from traumatic origin, we may expect benefit.

2. That the mercurial inunctions in conjunction with the hot baths are always beneficial.

3. That unless the origin is from specific, blood or mineral poisons that the use of kali iod. is more often harmful than beneficial.

4. That strychnia, as a rule, is good only in cases of spinal origin.

Let us have a Department of Public Health!

THE INCREASE OF INSANITY AND TUBERCULOSIS IN THE SOUTHERN NEGRO SINCE 1860, AND ITS ALLIANCE, AND SOME OF THE SUPPOSED CAUSES.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY THEOPHILUS O. POWELL, M.D.

MILLEDGEVILLE, GA.

The negroes of Georgia, and I might say of the Southern States, up to 1860 enjoyed remarkable mental and physical health, and they were almost entirely exempt from certain diseases to which they are now not only very susceptible, but are dying much more rapidly from these maladies than the whites; namely, insanity and consumption.

While they may indicate much less susceptibility to miasmatic fevers, they are becoming more and more susceptible to them every year, and when we consider that heredity is one of the leading factors in the causation of insanity with the whites, and know that twenty-five or thirty years ago insanity and consumption in the negro could not have been attributed to hereditary predisposition save in a very few cases; couple this phenomenal increase in this race since 1860 with the inherited tendencies to these maladies, which we might say is just beginning to be manifested in full force, and when we remember that it is the insane and consumptive diathesis that widens and deepens by heredity from generation to generation, unless the laws of health are properly appreciated and conformed to, are we not justified in apprehending that the number of colored insane in the Southern States will soon be as large, if not larger, than the whites in proportion to the population?

The census of 1860 will show that there were forty-four insane negroes in the State of Georgia, and the majority had white blood in them; consumption in the full-blooded negro appeared to be just as rare at that time. Up to and during the war, the negroes were the principal nurses for the consumptives of the South. They washed the cuspidores, bedding and clothing of the consumptives, swept and dusted and in many cases slept in the rooms with them, and were more exposed to the tubercle bacillus than now as a general thing; still they resisted the disease. Why then this sudden and radical change which makes them so susceptible to both consumption and insanity? These 44 were of a population of 465,698, or one insane negro to every 10,584 of population; and there is no good reason from family pride, or fear that their future hopes would be blasted, to suppose that the census of 1860 was incorrect as so far as it relates to the negro insane.

The census of 1870 shows that there were 129 insane negroes in the State in a population of 545,142, or one colored insane to every 4,225. The census of 1880, colored population 725,133; insane, 411, or one to every 1,764. The census of 1890, population 858,815, insane 910, or one colored insane to every 943 of population.

The rapid increase of insanity and consumption in this race, is due to a combination of causes and conditions. This race has developed a highly insane, consumptive, syphilitic and alcoholic constitution which predisposes them to diseases which formerly they were free from. In this disturbed and unstable condition they seem to be totally unable to resist the

slightest exciting causes. They are liable to succumb much more readily than the whites; especially is this true in regard to insanity and consumption. These causes could not have existed prior to 1860 to any large extent, or we would have had the same pathologic changes and results that we have now. Up to 1865 it was to the interest of the owners not to allow them to violate the laws of health; therefore, their hygienic surroundings were carefully guarded from their youth. Their lives were regular and systematic, and they were absolutely restrained from all dissipation and excesses, and when sick they had the very best medical attention and nursing, until pronounced restored by the physician. Freedom removed all hygienic restraints and they were no longer obedient to the inexorable laws of health, plunging into all sorts of excesses and vices, and having apparently little control over their appetites and passions. It is very manifest that these morbid tendencies and susceptibilities have been growing for the past thirty years; hence, their unstable condition, and susceptibility to and inability to resist attacks of disease.

Dr. Eugene Corson, in his paper on the "Future of the Colored Race in the United States," says, "All the information which I have been able to obtain has satisfied me that the race was a healthy one—even healthier in the main than the whites. Since the war things have been reversed; the colored race as a race is not a healthy and robust one; their vitality is in a condition of unstable equilibrium, liable from any undue strain to give way. To the physician practising in their midst this fact is constantly being brought home, and in many striking ways. Before the war consumption was rare among them—to-day it has become very common, and the mortuary statistics show that about two colored to one white die of this disease. The reports from cities show an even greater mortality. The race has developed a highly scrofulous and tuberculous constitution which is manifesting itself in many morbid conditions and tendencies." "In returns from death from consumption in the last five years the colored death rate is nearly triple that of the whites." This was in 1887, and I have no doubt that it is now increasing rapidly in the rural districts.

I am indebted to my old friend, Dr. T. S. Hopkins, of Thomasville, Ga., for the following letter in regard to consumption in the negro race.

"Since my return home I have been searching the records in my office hoping to find something therein in reference to consumption in the negro race. I have in my office journals and books dating from 1783 to the present time. In none of these have I found any reference to the matter. When the negro is referred to at all he is placed among the immunes. Knott and Gliddon in their book on the 'Nonunity of the Human Race,' ask, 'Whoever saw a negro with consumption?' If that question was submitted to you and me now, our answer would be, 'yea, many of them.'

"Finding nothing of interest in these old records on the subject, I propose to give you my own experience after an active professional life of fifty years. Twenty years of my professional life was among the large plantations on the coast of Georgia, where I saw and prescribed annually for hundreds of negroes. During these twenty years of practice, among all the negroes I prescribed for, I never saw but three cases of pronounced pulmonary tuberculosis.

"During the war between the States I was stationed for some time at Andersonville. I was assigned to duty with the Engineer's Department, where a large number of negroes were employed on the fortifications. I had to register all the patients for whom I prescribed. I registered several hundred, but not one case of consumption appeared on my register.

"Why, then, is it that the negro, who was until a recent period, exempt in a great measure from consumption, is now the chief sufferer from that disease in the same climate where he was born and raised, and enjoyed an immunity therefrom. In our cities which have become popular resorts for the consumptives the negro is the chief sufferer. This is so with us, and it is so with all other consumptive resorts of which I have any knowledge. Consumption among the negroes here commenced among the chambermaids, laundry-women, bell-boys, and waiters at our hotels and boarding-houses, where the consumptives spend the winter. They contract the disease from the visiting consumptives, and have disseminated it through their kin and kith among our negro population. I do not believe that consumption is a palpable contagion, but that it is a communicable disease I have no doubt. I believe that it is to some extent a preventable disease."

From observation and investigation I am forced to believe that insanity and tuberculosis are first cousins, or at least closely allied. The sudden outburst of insanity with the colored race of the South came associated with tuberculosis, hand in hand, keeping pace one with the other; hence, in obtaining histories of cases as they are brought to our institution the hereditary predisposition to consumption is carefully inquired into. The prognosis of phthisical insanity is unfavorable. I am not surprised at any time to find insanity in a family strongly predisposed to phthisis, and phthisis in a family strongly predisposed to insanity.

Dr. McKinnon, the first Medical Superintendent of the Royal Edinburgh Asylum, says, "that scrofulous and insane constitutions are nearly allied."

Insanity, in my judgment, is frequently a symptom of tuberculosis. Tuberculosis is much more frequent with the insane than with the sane, and especially is this true with the colored insane. I believe that more colored people die in our institution from consumption than in the entire county in which it is located. While I have no statistics to sustain me, I am satisfied if I could obtain correct statistics from the county, it would bear me out in this statement. In comparing the death rate in the Georgia Asylum between the whites and negroes, although the care and treatment is the same, the proportion of deaths from this disease is larger in the colored race, and I find the results are the same in other institutions where both races are treated. I am fully satisfied that consumption is communicable, but it can not be entirely attributed to their surroundings in the institution, for a large number of them are brought to us in a tuberculous condition. Does not the above clearly show the connection between tuberculosis and insanity? Esquirol says that "scrofula is one of the causes that predisposes to insanity." In my opinion, a large number of cases of marasmus that are recorded as the cause of death in asylums upon careful postmortem examinations tubercular deposits would be found.

Dr. Clouston of the Edinburgh Asylum says, "the

general results to which my investigations have lead me are the following: Phthisis pulmonalis is much more frequent as an assigned cause of death among the insane than among the general population. Tubercular deposition is about twice as frequent in the bodies of those dying insane as in the sane. Phthisis pulmonalis is the assigned cause of death in about one-half of those in whom tubercular depositions are found after death.

Some near relatives of patients were insane in 28 per cent. of the men and in 25 per cent. of the women who were tubercular, while the percentage of hereditary predispositions among the admissions since 1840 had been 19 per cent. of both males and females. This may show that phthisis is most frequent among those with hereditary tendencies to insanity, or that insanity is apt to appear in more than one member of families with phthisical predisposition."

"When such expressions as exhaustion, general decay, natural decay and marasmus are put down as the cause of death in 10, 15 and in one as high as 60 per cent. of the cases, we can not arrive at any correct idea of the true causes of mortality in asylums."

Consumption or lung diseases are the causes of death of 22.5 per cent. of the males and 32 per cent. of the females who have died in all the public asylums in Scotland for the last four years, according to the reports of the Commissioners in Lunacy. In eight of the North American asylums the deaths from consumption amount to 27 per cent. of the whole according to Dr. Workman. He says that "deaths from consumption in New York City are twice the rate per cent. of any of the others except his own at Toronto," and says, "I am strongly inclined to the belief that the New York City asylum records have been based to a large extent upon postmortem evidences rather than antemortem suppositions."

The direct and indirect effects of syphilis is one of the leading factors in the causation of insanity with the colored race. On some of the plantations where there are a great number of negroes, few of the adults are free from the taint of syphilis. I have conferred with a number of physicians who were engaged in practice, before the war, on some of the large plantations, as to syphilis in that day. They are fully agreed in the statement that secondary or tertiary syphilis was almost unknown with the country negro. If one had syphilis the family physician was sent for, and the treatment was continued until the patient was pronounced fully cured. The patient had to tell from whom it was contracted and if it was from a neighboring plantation the owner was notified, and that individual infected was subjected to the same treatment. They were quarantined to prevent the spread of the disease and they dared not communicate it after it was known.

The owners appreciated the great danger of delay and neglect of such a disease, and every precaution was taken to check it in the beginning. The treatment of syphilis in this race now as a general thing is very unsatisfactory. They are disposed to be treated first by some other negro, and it is seldom that they go to a physician before the secondary and tertiary stages, and then they will not carry out the directions. If they have a physician in the early stages, as soon as the chancre heals the treatment generally stops, if not before. Overcrowded sleeping apartments, neglect of personal cleanliness, poor and irregular nourishment are causes for the development of these diseases. Before the war they ate from one-half to one pound of fat meat regularly every day and literally lived in the open air.

I am indebted to Dr. J. C. Patterson for the following information: "Some fifteen years ago, while engaged in the general practice of medicine in the southwestern portion of the State, my attention was called to the ravages made by consumption among a settlement of negroes comprising about three or four hundred, who lived near together upon three adjacent plantations. There is nothing in the location or surroundings to cause such a condition of things, but apparently everything that was conducive to health. I made special investigation and inquiry as to the causes. One of the plantations was owned by an old physician who had been the attending physician on all three of the plantations for thirty or forty years. He was a gentleman of intelligence and of an investigating turn of mind, and had given considerable thought to the supject, and from him I obtained the following facts: Prior to the war they enjoyed remarkable mental and physical health; consumption, insanity and like wasting diseases were altogether unknown among them. When the negroes were emancipated there were upon these three plantations, including children, between four and five hundred as healthy individuals as could be found, and free from all hereditary taint or tendency to any disease whatsoever. The negroes as a rule remained on the plantations where they were born. It was not long, however, before syphilis appeared among them, and it gradually spread over these plantations, the disease in nearly all cases going into the tertiary stage. Some ten or fifteen years later consumption and insanity began among the adults, and many of their children died from scrofula and tuberculosis, and it was the exception rather than the rule that the children lived. Bodily deformities and idiocy and other morbid conditions were very frequent among them.

Alcoholic intemperance is another leading factor as a cause of insanity. The ultimate results of alcoholic intemperance in this race are to be apprehended more than any other influence, from the fact that there is a tendency, not only on the part of the men to alcoholic intemperance, but also with many of the women. Could we expect a perfect mental and physical organism from parents both of whom were drunkards? Legitimate results would be insanity, intemperance, depravity, crime, idiocy, epilepsy and various morbid conditions. Persons addicted to alcoholic excesses are almost liable to transmit to their progeny a strong tendency to these defects as one who is himself subject to one or more of them.

A distinguished alienist said, "that the children of intemperate parents are liable to become insane, intemperate, epileptic, and much more liable to be congenital imbeciles, is beyond dispute." I have long thought the worst effects of alcoholic intemperance is to be found visited upon the succeeding generation of drunken parents. The fact that both parents are seldom drunkards is all that saves descendants from utter ruin.

Blandford says that "if we could ascertain the statistics of insanity in other countries, civilized, semi-civilized and barbarous, I think it probable that we should find insanity in proportion to the use of intoxicating liquors and substances." I do not think brain tension or mental anxiety as to the care of their families in the future is a cause as yet of insanity among the negroes.

There are other factors in combination with the above, which I deem unnecessary to mention, that have had their influence in the conception and development of these highly insane and consumptive constitutions in this race, which are making them so liable to these maladies from slight exciting causes. Too much liberty and freedom, so far as the laws of health are concerned, is dangerous to the mental and physical integrity of any people.

DISCUSSION.

Dr. CAMPBELL, Knoxville, Tenn.—There has been a large increase in both consumption and insanity in the negro race since the Emancipation Proclamation, but not to the extent that Dr. Powell suggests. His paper is valuable in showing how the excellent care taken of the negro before the war induced his exemption from many diseases.

Dr. Powell says that in 1860 there were but forty-four insane negroes in the State of Georgia. I must question these statistics, and I think they can be accounted for. We find in the asylums now a great many of what are called "defective classes." These are people who are not able to make their way in the world against strenuous competition, and who have become a nuisance in society. Such people on the plantation, however, were not called insane; in fact, they made useful hands. The very same endowed individual now is at Dr. Powell's hospital.

In reference to consumption, I have no doubt there has been a large increase, but I must question his statement that the negro race was comparatively immune before emancipation. I have personal recollection that it was not so. We all know that excellent hygienic surroundings, a regular and carefully selected diet, will do much in warding off consumption; and the one-half to one pound of bacon that these negroes consumed every day was a most excellent prophylactic when the stomach was able to digest it.

In the mountains of Tennessee there are many negro families that have died out since the war. It was due to the lack of this bacon; the negroes were not nourished and they fell a prey to the ravages of tuberculosis.

Acute miliary tuberculosis before the war was called "negro consumption;" it had that name because whole plantations died off with it. They would die in a few months after the disease was recognized.

Dr. D. R. BROWER of Chicago—A few years ago I investigated this very subject. I found that in Virginia before the war all insane negroes were gathered together in a small ward of one hospital. They were a perfectly insignificant factor; fifteen or twenty was about the average number, and all the insane of Virginia among the negroes were there. Now Virginia has in a large hospital, Petersburg, containing about 700 patients; at the time I made these investigations there were about 500. The patients in the Petersburg asylum were not the class of patients whom the Doctor has just spoken of as "defective." In Virginia the rule is very rigid, and all these patients *demanded* the care and custodianship of the insane hospital; so that so far as Virginia is concerned I am sure that the statistics of Georgia bears out Dr. Powell in his conclusions. It is a menace to the white population, this rapid increase of tuberculosis. Some means must be devised by which the three great factors of insanity, tuberculosis, syphilis and alcohol, may be done away with. If we could exterminate these three things, there would be but very little necessity of discussing the etiology of insanity. Added to these is a fourth factor; that is, improper food.

Dr. POWELL—While there was no good reason why the census report up to 1860, and even up to the present, should not have been correct, this is especially true of the census up to 1860 so far as Georgia is concerned, from the fact that there was no family pride existing to prevent the return of these data, but more especially from the fact that these negroes were *mere property*, and do you suppose that an individual would return his negro as sound—when he would be worth $1,400 or $1,500—if the negro was in fact unsound, or even if he was defective? It is natural for us to suppose that the census returns in that day, and under such circumstances, were correct.

THE PHYSIOLOGY OF DECUSSATION OF NERVES; A ONE SIDED BODY MEANS A ONE SIDED BRAIN.

Read in the Section on Neurology and Medical Jurisprudence, at the Annual Meeting of the American Medical Association held at Atlanta, Ga., May 5-8, 1896.

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The brain hemispheres are paired, and are as organically distinct as the two hands or eyes. From all parts of the body surface pass in each lateral half of the spinal cord and in the cranial nerves the afferent or sensory nerves pass into each brain. The motor or efferent nerves reversing this, pass from each brain to every muscle of the body. These nerves are so many living conductors whereby that complex organism a living man or animal is made a unity. To and from the spinal cord, also duplex, enter and emerge the nerves at each vertebral division. The posterior relay ganglia mark the entrance of the sensory nerves, while the motor nerves emanate from the anterior portion of the cord on each side. In each lateral half of the spinal cord these nerves pass up and down to join the medulla oblongata which also receives and gives off all but two of the cranial nerves. It also receives the accessions of the three cerebellar peduncles. A remarkable mechanism is here effected whereby the nerves decussate from the right to the left and from the left to the right, about 90 per cent. crossing while 10 per cent. pass direct. By this arrangement *either* brain receives and gives off nerves to and from both sides of the body. Above the pons the medulla oblongata divides into the crures. These right and left peduncles (perfectly independent of each other) expand upward and outward and through rapid accession of substance expand in the substantia radiata, becoming the right and left cerebra. The radiating nerves are the medullary substance which form the frame work and large interior mass of the paired cerebra. The nerve fibers can be traced from below until they reach the cortex and connect with the nerve cells. The cortex is about one-tenth of an inch in thickness and forms the convoluted surface of the brain. It is supposed our mentality has its seat therein. It is more vascular than the medullary substance. It is grayish, due to pigmentation of cells, granules and neuroglia. A cross section shows it made up of five layers of cells and neuroglia. These shade gradually into each other and are distinguished by the shape of cell constituents. Nerve fibers pass vertically and transversely interweaving among the nerve cells. Nerve cells are triangular, pyramidal and fusiform, are nucleated and filled with granular matter into which the fibers project. They are definite structures, do not increase in numbers from early life to advanced years, nor are they known to be reproduced when destroyed.

The olfactory nerves have no connection with the medulla oblongata, but emanate directly from the olfactory bulbs beneath the frontal lobes; they are eighteen or twenty and pass directly through the underlying foramina of the cribriform plates, and melt

away on the surface of the ethmoid cells and nasal passages generally. The sense of smell being centrally placed and with no motor reactions its nerves do not decussate. The optic nerve has no connection with the medulla oblongata. It has, however an independent mode of decussation. Its fibers unite and cross in the optic commissure. Here also a notable portion of fibers pass direct to the optic tract of the same side. Here we see the easily demonstrable type of decussation characterizing all sensory and motor nerves. The great preponderance of nerves, 90 per cent., crossing in the medulla oblongata gives a pronounced and primitive inhibition power to either side. This anatomic feature effects this remarkable result, namely, a *switching* off of one cerebrum in order that the other may rest. It would appear that nature designed that either brain through its crossed and direct tracts should be able to control *temporarily* all sensory and motor manifestations on either side of the body. We can not but suppose that this decussation structure is for temporarily holding one brain alone in action, just as is the case with the two eyes, which perfect counterparts as they are, we can hold one or both eyes in use with the same result upon the sensorium. The two eyes are functioned by habit to joint action, hence they are perfectly ambidextrous.

The question of habit is a large one. It has been defined as the tendency of acts or movements of living beings to be repeated. Certain nerves to and from a group of muscles control them, at first unequally but after many efforts the muscles are compelled to act in unison. At last in the effort of adjusting to harmonious action, a muscular movement first clumsy and slow becomes almost automatic, each detail of the movement is as if it were obliterated. We can not say each nerve conductor does not act separately though we say usually the action is instantaneous. However, we realize from experiment that the time element does come in and can be measured by delicate instruments. A certain less and less moiety of duration in all rapid conjoined movements is apparent. We also know the action is not strictly automatic, since if one or more of the nerves of the group is cut between the brain and muscle, the action is destroyed as certainly as though a wire was cut in a complex system of telegraphy. Habit begins with the first action till it becomes most confirmed and with each successive act becomes easier and more rapid. The effect of habit is especially seen in the successive or simultaneous action of voluntary muscles, which are united in motion as in writing. In these muscular associations if an impulse is started, it runs through a long list of words, etc., without fresh impulse. The adroitness of handling the pen in continued motion is a matter of education and habit. The musician affords a striking example in the development of the finger movement. The muscles of vocalization are so much under the control of association habit that were it not for this no one could learn to speak. The power of habit is shown in the association of ideas. We speak of habits of drunkenness, swearing, lying and of every modification of speech or thought; habits of industry, order, idleness, vanity, cheerfulness and melancholly; we are called "bundles of habits." Set a boy at a new lesson, his countenance, skin, pulse, demeanor, are much disturbed, as from great physical exertion; this disappears as he is familiarized with the process.

Habit also instead of increasing sensation lessens it. We habitually come to disregard our clothes after a while as well as sounds, though at first conscious of them every minute. Thus habitual motions become changed from volitional to so-called secondary-automatic actions, as in walking and speech. The action of the vocal muscles is preceded by sensation, idea and volition, but after speech is acquired it becomes purely sensational or ideagenous, easy and as it were automatic. Habit, first the offspring of volition, seems to become its successor. Repetition of volitional impulses, however, give increased force to the related centers of motion, because these centers become active. Many ideas, as the ego and non ego, have a natural tendency to conjoin, as the existence of one involves the other. But ideas casually clustered and linked together by the mechanism of volition will at last as strongly coalesce. The force of habit thus compares with instinct, and education vies with intuition, and habit becomes second nature. Habits once acquired are not easily discontinued, they are grooves in which the mind is accustomed to move. The great importance of habit is perceived to be economy of time. Through rapidity of muscular action a complete unity of our complex animal organization is effected. The tendency to form ruts or habits in the nervous system becomes the potent cause of one-sided action of body and brain. At last, actions, the result of education, become second nature. This is seen in the great right and left sided deftness, which becomes permanent and assumes an undue importance in the vital economy. It is sometimes the left side, but generally the right. It might as well be both sides.

Our body is built of paired limbs, paired muscles, paired nerves and organs, alike in form, structure and function, being simply counterparts like the eyes, ears, hands and feet, the only difference being the reversals necessitated by opposite sides of the body.

All mammals are made up of such paired parts, alike in function and strength. In man alone we find the exception of a difference of the two sides in strength, dexterity and usefulness, though none in form, make-up and function.

How has this great difference originated? A heredity of ages has had no effect in changing the form of limbs, hands, muscles and nerves of the two sides. But how great the difference in strength, dexterity and usefulness in the two hands and arms! I contend it does not arise from nature or necessity, but is simply a human contrivance or convention established in the infancy of the race, and kept up by habit arising alone from the tyranny of an antiquated if not foolish custom. A child is born weak helpless, without an instinct; it is dropped into the loving hands of parents, who enter at once upon its care, sustenance and training, teaching it by its external senses, organs, muscles and nerves to pass through those marvelous, though simple processes, the result of which is the education of hands, feet, eyes and all the special senses. The nervous system is an infinite congeries of conductors from all parts of the skin, from all internal structures to terminate in each brain, which in turn becomes the storehouse and place of record of all sensations resulting in memory, where all associations and ideas arise and are preserved in the cerebral tablet, so much more wonderful than Edison's. The brain itself is trained in turn to exercise itself in comparing sensations and ideas and in directing movements, and at length in the practice of the royal prerogative of reason, judgment and will.

A fair and perfect mechanism is committed to human care. Henceforth nature may be said to cease, for man begins. A primitive idea of nature means all outside of man.

Perhaps it is useless to inquire why the ordinary right-sidedness of body became established among us. I can only suggest that it originated in the early days, when fighting with each other was the chief occupation and duty among men. The wearing of the shield on the left arm and the wielding of the club, spear or sword in the right hand became established and the resulting effect has persisted ever since. The repeated appearance of left-handed persons is against the presumption of right-handedness being an institution of nature. Biblical history says that soldiers of the tribe of Benjamin were left-handed and thereby became expert "slingers and mighty men of war." The Carr tribe clan of Scotland are also said to have been uniformly left-handed. Notwithstanding the knowledge of the oft-repeated supremacy of the left hand and side, yet the thought of ambidexterity is a recent suggestion. The attempt to establish it has been made only in late childhood or early manhood. This, however, seems too late to effect any satisfactory results. Still the partial success among artisans and others, in effecting moderate ambidexterity is promising, and evidences what may be hoped for when it becomes general. It is hardly possible to estimate the advantages which would ensue by securing to the race the equal use of the right and left hands. An increase in the labor capacity, especially in the skilled crafts, would doubtless equal a third, not only from the coincident use of two strong hands, but from the respite afforded to nervous and muscular energy of either hand in use. It would obviate writer's cramp and other fatigues contingent upon continuous use, and relieve the great disability arising from injuries or disease of the practiced hand. I have seen many cases of partial ambidexterity among mechanics, and the accomplishment was regarded by them as of much importance. I have seen but one case of perfect ambidexterity. The late Dr. Alex. Mott of New York, could use equally well either hand in writing or in the most delicate operations and in nice dissecting. He was for years one of the most skillful operators in New York. When he was a child his father, the celebrated Valentine Mott, said, "My boy must succeed me in my business. I shall see to it that he has two good hands instead of one like his father." The training was a complete success in securing a two-handed deftness which was a marvel to all on-lookers. It is stated that Dr. Pancoast of Philadelphia was also a perfect ambidexter. It is extraordinary how few are known to have been so in past history. Homer's Iliad describes the warrior Asteropæus as throwing a spear with each hand at once. Also some of David's men-at-arms could use both hands. Leonardo da Vinci and Michael Angelo are known to have been perfect ambidexters. Leonardo da Vinci was not only a distinguished sculptor and painter, but an eminent machinist, engineer, architect and inventor. It is remarkable that these two great men, on account of this feature, are placed by our statistical and science gossip, Lombroso, among his mattoids or degenerates, who happen to share in the accomplishment of pickpockets. The latter, from neglected training or from obvious professional reasons, in the ratio of ten or eleven in a hundred are ambidextrous or at least left-handed. Each of these men, Leonardo da Vinci and Michael Angelo, lived to vigorous old age and were distinguished by fine physique as well as marvelous ability.

Physiologists admit that it is through the far and wide ramifications of the nervous system and the definite distribution of nerves and mode of conduction established, that habits are initiated and become confirmed, whereby second nature becomes the rule and first nature the exception. This may be seen in the many deftnesses of hand or foot secured by long practice. We know that novel coördinations of muscles, feats of strength and legerdemain are compassed by gymnasts and sleight-of-hand performers which seem preternatural, but become easy of execution. In course of time, too, movements at first special or occasiona lbecome overmastering, persistent and habitual and usurp an undue place in the vital economy. It is so with the right side; it might as well be the left; or it might be both sides. It seems to me anatomy distinctly points to this as the natural consummation. The only practical way to insure ambidexterity is to begin in infancy and keep up the effort through youth, while the body habits are being established through the nervous system.

My contention concerns not merely the physical training of the muscles and limbs. I believe that the brain is affected far more than the rest of the body by by our one-sided training. Within the past year I have had charge of a case of brain softening which involved the whole of the right crus or peduncle of right brain. In the postmortem it was found that all sound nerve fibers went entirely to the left cerebrum. The convolutions or cortex of both brains were sound. The pons, medulla oblongata and spinal cord were healthy. There was considerable thickening of the dura in places and a more or less atheromatous condition of the large cerebral vessels. In this case there was no paralysis. The special senses were all good. There was some loss of directive power of the eye, the right branch of the third pair of nerves being involved at its origin. The great failure seemed to be in will power and in a general indisposition to cerebrate. The patient could by suggestion perform all ordinary movements. His reasoning powers were normal, but he would fail in successive acts of cerebration. His word memory was good but he tired easily in putting words together as in writing. He recognized people, always calling them by name. Rising from a chair he would often stand timidly, uncertain in stepping, but by a word he would step off freely. By slight impulses, given by hand direction on upper part of the spine he would move off briskly round and about and up stairs, being guided as a horse by a bridle. Acts to which he was long accustomed, such as eating or smoking, he performed without suggestion and very well. He indicated in many ways the strength and persistency of established habits. This case proves that a man can think and act without help from the right cerebrum, and has been to me a crucial case.

My study of several cases of aphasia a number of years ago almost established the view above expressed, but I was long led to imagine that the right brain was responsible for what we call unconscious cerebration. Aphasia is characterized by loss of language and originates from cortex lesions in the third left frontal convolution. At first in aphasia words fail, but the patient may recognize words addressed to him. The

power of writing words is lost early. My dissections corroborated fully the determinations of Broca, who discovered the pathologic fact in 1861. Since that time, by more than a thousand cases, it is confirmed that in all right-handed aphasics the disease is located in the left cerebrum. It has been further observed that in all left-handed patients the softened area is in the third right frontal gyrus. The question invariably arises in these postmortems: Why does not the healthy right brain carry on the power of speech when the other brain is diseased? Is it not because the right brain by decussation of nerves in the medulla oblongata is preponderantly connected with the left side of the body, and is thus by habit untrained to action? The result of left-handedness is that the right brain becomes master. But the great majority of men are right-handed; the left brain has been elected in early life as the master of cerebration. It follows as a corollary that were both sides of the body trained exactly alike the two brains would be functional to coincident as well as separate action just as is the case with the two eyes. Among musicians, whose nervous systems are greatly exercised and strained by their calliug, aphasia or amusia is common. Here the area across the Sylvian fissure from the third left frontal is involved. The musician becomes dumb to music, instrumental or vocal, showing that his musical ideas or expression powers are stored in the left cerebrum, provided he is a right-handed musician. Though the pianist and the violinist use their left hand much, it is mostly as an accompaniment. He hardly ever attempts instrumental music until after the fifth or sixth year, when certainly the one-sided body habit has been fully initiated, and as we have stated, where one cerebrum has been functioned to control, it commands both sides of the body or the motor and sensory nerves of both hands just as it does the bilateral nerves and muscles of the vocal apparatus, as seen in common aphasia.

I have never seen any attempt to explain the *raison d'être* of decussation of nerves. In the case of right-handedness established in childhood this switching off of the right hemisphere is made permanent by habit, and the left brain is functioned or elected as the entire master of ceremonies, whereby it becomes the storehouse of all memories and associations, the home of will and ultimately of all thought. The plan which nature through anatomy established, whereby the two brains should be perfectly complementary to each other, is defeated by the custom of right-handedness. After the decussation of the nerves in the medulla oblongata there is an accession of crossed nerves from the pons and cerebellum; from these sources the motor and sensory filaments unite with the spinal cord fibers to form every sensory and motor nerve on both sides of the body. The use of decussation becomes thus of no further importance, after a one-sided body is formed. The decussation of the optic nerves is kept up in function, however, through the perfect coöperation of the eyes; one retina supplements the other. All the special senses must become in time functioned to the left cerebrum, owing to this establishment of supremacy by habit. The celebrated case of Professor Lourdet of Montpellier, a prominent lecturer of the French medical faculty, is both significant and convincing. He was struck by aphasia and lost all power of speaking or writing his mother tongue. After a while he found that by putting letters and words together he was able by degrees to relearn his own language. Thus beginning as a child, in course of time he taught himself by functioning his right brain again to write and speak. This has been repeated since after traumatic injuries of left brain involving the third left frontal convolution, especially in young subjects. The right brain has been gradually trained to the exercise of verbal memory and thus a modified cure is effected.

Miss A. of Cleveland, Ohio, was deprived of sight by amaurosis. She was an accomplished young woman, with fine memory and conversational powers. Her blindness continued several years, but her mental faculties seemed to increase with her infirmities. She was killed suddenly by a fall. A postmortem revealed a bony tumor springing from the orbital plates which embraced the optic commissure. The tumor had grown to the size of a man's hand and lay in the right cerebral fossa. It had effected a general atrophy of the right cerebrum. There were no failures during the growth of this tumor of any cerebral powers. This case shows that one cerebrum may be thrown entirely out of action by disease, as we consider it can be by habit.

Andral's case is significant. A man, 28 years of age, died with atrophy of the right cerebrum. A large cyst occupied the entire field of the right cerebrum, in which was not a trace of cerebral matter save a portion of the basal ganglia. This person took a fairly good education and used it to good purpose. "His memory was excellent, his manners fine, his understanding was above mediocrity." Cruveilhier gives two instances where but one hemisphere existed, yet there was bilateral action of sight and hearing as well as of all body muscles.

Lattemand describes a person of normal psychic constitution in whom the right cerebrum was found displaced by a cyst filled with serum.

The corpus callosum is a broad band of white medullary matter which passes from one side of the brain to the other; it is generally looked upon as commissural. This band completely roofs the lateral ventricles, arching over the great brain ganglia, with which it is more or less intimately connected. There have been several cases where three-fourths of this structure have been destroyed by softening and still no particular disturbance of mental or sensational powers were noted. It is also sometimes absent. Bruce collects fifteen cases of entire absence of corpus callosum. On the whole, he is inclined to reject the idea of the coördination of the two hemispheres thereby. The other commissures, the anterior, middle and posterior, are small and two of these have been known to be absent with little or no disturbance of coördination. The medullary fibers in the medulla oblongata and pons cross and interweave from side to side and seem exactly adapted to effect coincident action of the two hemispheres. Yet from the pressure of a notable portion of fibers, called the direct tract (uncrossed), which, uniting with largely preponderating crossed fibers, do enable each hemisphere to act independently, which independent power designed for temporary use becomes permanent by habit, and so all the commissural arrangements are made of little or no account.

There is no physiologic reason why the two cerebra should not act coincidently and in perfect harmony as do the two eyes, or by the switching off apparatus, viz., the decussation, which gives the primitive inhibitive function either cerebrum might respite the other

by acting alone. Moreover the free commissural connection would permit the counterpart areas to keep together in their record of memories and sensations. Thus we contend that one brain is unfunctioned inevitably. It needs no discussion to show that were one eye shut off from coincident action with the other for three or four years, the two eyes would never be able to act together. Indeed, I have known a life-long infirmity to follow a few months' separation of the eyes. So, if our cerebrum is functioned to act alone in singing, speaking, etc., it would become permanently divorced, or one cerebrum would be for life made master of cerebration.

"Man thinks because he speaks," says Leopold Noiré. "No language without reason," says Max Müller. If man thinks because he speaks, more often he speaks because he thinks. Language is the outcome of mentality, in particular of memories, comparisons and associations. All sciences, all philosophies, all religions even, find their entire expression in language, as all art, all experience, all poetry, the ideal and the real, find their interpretation here. How can the physiologist think of language as a single motor function like striking or kicking. Language is the voice of the mind concerning external nature, the body and all its members, and reports to us of our innermost consciousness. Its seat is where all our mental attributes are clustered and in easy reach.

When the right brain has been switched off from all direction by habit, it is only occasionally, by years of training, it can be brought into action. If the two brains were trained to joint action, exact counterparts as they are in form and purpose, our understanding or mental power would be greatly increased. If the aggregate of our mentality be not increased, there would surely result greater accuracy in our recollections and less likelihood of our forgetting, as we would then have two places of record. Beside, the brain commissures would be brought into free use between the cerebra, greatly to reinforce the accuracy of the mind in all its functions and adding much to the facilities of cerebration. What causes the great differences among minds is unknown. The volume of brain has been with reason considered important. At least this will be doubled if our contention is well founded. Certainly the wear and tear and susceptibility to disease and injury must be greatly increased by single cerebration. The strong proclivity to insanity might be obviated by joint action and the needed respite which one brain would afford the other. The tendency to monomania would be diminished and the evils of brain softening become far less common. If left-sided cerebration is brought about by the right-sided training of the body, how important that this ancient foolish custom should cease. "Custom only can alter and overcome nature," says Bacon.

Infants under my observation show little or no preference for the use of either hand. When a young child is laid on his back his legs and arms are always thrown out in every way, one side as much as the other. I have often seen mothers slap the baby's left hand or tie it up to the back to discourage its use. The result is then sure, that the right hand is put forward in all movements, also in judgments of matters of sensation, of weight and pressure, of the roughness and smoothness of bodies, of degrees of heat and cold. The right hand only is trained to strike with hammer or club. It only is practiced in throwing a ball or stone. It is indispensable that all these practices should be shared by the two hands through infancy and childhood in order to effect the desired result. In early childhood all these primitive sensations and movements leave their impressions on record in the left cerebrum with right-side training; this being continuous, must surely produce a permanent effect. Physiologists are agreed that the systematic use of the voluntary muscles must have great influence in the development of the brain. It is through muscular movements that we acquire through touch our ideas of matter, of the *me* and the *not me*, of time and space, much reinforced through the eyes and other sense organs. The very germs of volition are found in movements. Conscious movements are the source of pleasure and pain, which we recognize as germinal also in mental life.

With respect to the muscular system it is undoubtedly true that a prolonged non-use of a part leads to atrophy. This does not hold true of the eyes or the nervous system. In many cases of cataract, etc., which have continued for many years, when operated upon by removal of crystalline lens, the vision is restored, showing the normal susceptibility of the retina is in no manner degenerated. Though the right brain may be unfunctioned from infancy, its nutrition is kept and certain nerve tracts, when irritated or injured, must respond by left side symptoms and paralyses. This could hardly be different, for the nerve conductors are all there, nor are they destroyed by non-use. There is no good reason to suppose that brain tissue increases by exercise. The irritation or injury of cortex is one thing, and its responsiveness to the trained nerves from below is quite another. The right brain may be irresponsive to normal peripheral, muscular and cutaneous stimulation, yet show left-sided convulsions and paralyses by clots, embolisms or traumatic injuries. The right brain, though disfunctioned by habit, is still well nourished, and could perform its duties if its property of stimulation by nerves from below were not switched off. Injuries to the right brain by clots, embolisms, fractures, etc., are recovered from far more promptly than the same injuries to the left brain. The peripheral nerves pass to and from every part of the surface and every muscle to end in each cerebrum. These conductors pass side by side in the spinal cord and up through the medulla oblongata. Those from the right side cluster and pass into the left peduncle. Reinforced by the direct fibers, they spread out radiatingly to form the medullary substance. The nerves from the left side pursue the same course to form the right cerebrum. These radiating fibers form the body and framework of each brain. They sustain at their apices the cortex or surface gray matter with its manifold convolutions. This blanketing investment in which all our memories and sensations are stored, is comparable to the electric tension of the Leyden jar. This gray matter is a continuous layer, it dips down between the convolutions forming the sulci and returns on the other side of each sulcus to spread over the adjacent convolutions. These sulci carry and support the nutrient vessels, at the same time greatly increasing the surface. The convolutions have also what are called tangential fibers passing from one to another and to more distant areas. The crures, the legs of the hemispheres, may be well likened to the trunk of a tree whose expanding foliage is like the surface gray matter into which the nerves project. Indeed, the nervous system may be well called "the tree of life;" its roots are the sen-

sory, motor and organic nerves of the body. The culminating blossom and leafage is cerebration — the highest attribute of organized being. The circulation of blood through the brain is remarkable. It is estimated that one-fifth of the blood is continuously passing through it. Four large arteries enter the cranium through rigid, tortuous channels, by which the *vis a tergo* of the heart is much diminished. Again, these arteries at the base of the brain turn to a horizontal direction in the circle of Willis, whereby their oppositely directed currents serve to neutralize their momentum, that the delicate brain tissue may not be so readily lacerated. The greatest peculiarity of the brain circulation is, that from surfaces of contact the arterioles are given off parallel or in brush-like pencils to the various areas, and not in branches and subbranches, nor do they inosculate as the small vessels do in other tissues. When an embolism or clot forms in these vessels, the special area supplied ceases to be nourished and becomes the ready seat of brain softening. The most notable supply is through the great Sylvian artery, penetrating deeply into the brain and supplying each side of the fissure. This part of the brain being so well nourished, is especially adapted for the location of those early established functions of speaking and hearing and the mental associations therewith connected. The discovery of the speech center led to a great impulse among the evolution physiologists, to discover other faculty centers, and now we have the brain surface dotted over with figures. Although bullets, and even a tamping bar, have crashed through human brains, yet recoveries have ensued with much loss of brain substance. Still this wonderful material would patch up its rents indifferently, and the patient would recover nearly if not all his mental powers. This indicates that other parts do take up the parts of lost areas. I can not insist too strongly that the motor and sensory system, through the hand, establishes the primary relation with the brain and its functions. It is very significant that in Dr. Edward Seguin's study of the training of imbeciles, he found that the training of the idiotic hand led first and most surely and expeditiously to the development of the mental habit, whereby he was able to secure results hitherto deemed impossible.

Anatomists and physiologists have vied with each other in their expressions of admiration for the dainty and perfect structure of the human hand. It has been the text of a famous treatise as evidencing design in creation. The far away wonders of the firmament, of the solar system and the stellar universe have evoked no higher and more sincere expressions of wonder. Its exquisite adaptation to simple physical ends, its responsiveness to mind, has been a promise of the present in all the past, and is a prophecy of all future civilizations. No wonder the hand has been, with some philosophers, a most complete measure of the soul and its capacities. Why should there be, through human perverseness, but one hand instead of two? If language can be called the exponent of the mind, as truly so is the hand in the triumphs of art and in all mechanical industries; its responsiveness to intellect in the building and decoration of homes can be alone matched by its answering touch to the calls of benevolence, friendship and love. Let no one marvel that the hand should lead the mind through all the mazes of childhood to the heights and depths of life. The hand is as truly the organ of the mind as is the brain. What greater promise of improvement can be afforded than by two perfect hands and a double brain, healthfully responsive each to each through those exquisite conductors, the nerves?

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TREATMENT OF LUPUS VULGARIS BY MEANS OF ELECTROLYSIS.

Read in the Section on Dermatology and Syphilography, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5–8, 1896.

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As the *causa proxima* of lupus vulgaris has been established beyond any doubt to be the tubercle bacillus, and the intimate process to be a local tuberculosis of the skin, of necessity the question arises, whether we are able to destroy the tubercle bacillus by constitutional remedies. What, for a while seemed to be a certainty, remains still as a hope of the dermatologist. Several cases of lupus vulgaris have been referred to as completely cured by the Koch's tuberculin injection,[1] but impartial criticism and experience has failed to prove the so much desired assertion. Dr. A. Carruccio, at the last international medical congress in Rome, referred to twelve cases of lupus vulgaris treated with tuberculin injections in the clinic of Prof. C. Manassici. The minimum dose was 35 milligrams and the maximum 459 milligrams in twenty-seven injections. In every case the local reaction was apparent in swelling, redness, serous exudation, falling of the scabs, softening of the nodules, ulceration or necrosis of the same, erythema on the scars and new lupus eruptions. General symptoms were also apparent in every case as chill, headache, increased temperature, thirst, sleeplessness, pain in the muscles and joints, heat of the whole body, nausea, sometimes vomiting, abdominal pains, increased pulse and respiration and copious sweating. In three cases, after many injections, no result was obtained, so the patients were curetted and then cauterized with nitrate of silver. In some cases there was some improvement, but soon relapse occurred. In two cases the disease became much worse. The conclusion of the author is that the improvement was permanent only in those cases where local treatment was applied in combination with the tuberculin injections. I have seen unfortunate cases of lupus vulgaris, where tuberculin injections have been applied to the number of 200 and yet the lupus process inexorably continued its destructive work. It was therefore necessary to return to the old principles of treatment of lupus vulgaris, which have given good results in the hands of our teachers and in our own hand.

The old classic treatment of lupus does not ignore the general system. Cod liver oil is given in abundance, syrup of iodid of iron, phosphorus, creosote, hypophosphites, etc., are administered according to the peculiarities and to the indications of the case, not with the view of improving lupus locally but to improve the general system of the patient. Tuberculin can be used as treatment for the general system if found indicated, but I would not use it with the intention of curing a case of lupus. The attention of

[1] Report of a case of lupus vulgari- treated with Koch's tuberculin. Loomis and Fuller: Journal Cut. and Genito-Urinary Diseases, 1891.

the dermatologist is therefore called to the local lesion and his object is first to destroy the nodules of lupous tissue, and second to obtain a soft and regular scar without injuring the esthetics of the physiognomy.

To obtain the first purpose the surgeon will say that he can accomplish it in a moment with the scalpel. He takes off the affected skin, and then grafts with new, and without much trouble the case of lupus has in a few weeks been fully cured. Dr. E. Senger,[2] in Krefeld, advocated this method, claiming the complete destruction of the lupus-affected skin. I have under treatment a case of lupus vulgaris where a piece of skin one inch square had been removed from his forehead and grafts applied. The grafting had taken with good results, but all around the edge of the grafting new lupus nodules are again developing. I feel very much opposed to this kind of aggressive treatment, which I must refer to as a kind of surgical mania that every affection must be cured with a surgical operation. After having in the generality of cases discarded excision of the diseased skin, we find numerous methods of destroying the lupus nodules which can be referred to the curette, or to the caustics. The lupus tissue is so soft and friable that it can be easily removed with the curette. The resistance of the healthy skin indicates when to stop, as the curette does not scrape nor penetrate the healthy tissues. In cases of extended lupus ulcerations, with deep and thick infiltrations and large lupous nodules, the curette is the most speedy and satisfactory instrument for treatment.

In other cases when the lupus nodules lie deep in the derma and are small and scattered, the curette can not be of as much benefit as in the cases above mentioned. Here the linear or punctiform scarifications are indicated. The idea is to produce necrosis of the lupus tissue by cutting through the blood vessels which supply nourishment to the infiltrating cells. L. Brocq[3] recommended the linear scarification, followed by application of the galvano-cautery and dressing with a sublimate solution, completing the treament with cauterizations with nitrate of silver. The attention of the dermatologist has always been called to the possibility of producing necrosis of the lupus tissue, and as simple scarification was found insufficient for the purpose so as to help its action by means of caustics Auspitz and Schiff recommended that the point of the scarifier be moistened in some caustic solution, as iodin, chlorid of zinc or carbolic acid as to place in the middle of the lupus tissue a drop of the solution. Instruments were made for this purpose. But as the lupus tissue is soft and friable we can easily destroy the nodule by means of caustics, especially the stick of nitrate of silver, which can be easily inserted into the tissues.

When we discuss treatment we do not find difficulty in destroying lupus infiltration, but when we treat the patient we find many obstacles which we would never have foreseen. And for this reason we can not follow the same method of treatment in every case and often in the same case we must use different methods to bring about recovery. I wish, however, to mention electrolysis in lupus, which is not esteemed to the full extent of its merits. Indeed, the physician wishes to see a palpable effect from his application, and as the galvano-cautery produces a sudden destruction of the lupus nodules and the electrolysis shows little immediate change, we find the electro-cautery preferred to electrolysis. In speaking of the thermo-cautery of Paquelin, Unna[4] said that it must compete with the sharp spoon, and the scarification with salycylic and pyrogallic acid. In the electrolysis we have the scarification and a true and perfect disorganization of the tubercular tissue without the pain and destruction caused by other means.

We do not use any cauterizing action of the galvanic battery, but only that peculiar physio-chemic action of dissolution of the elements caused by the cathode on the organic tissues. According to the theory of Grotthüs, electrolysis consists of a series of decompositions and recombinations, and of a direct transfer of the elementary atoms from one pole to the opposite. The quantities of the substances which are thus decomposed will agree with the quantities of their chemic equivalents, but not with their atomic weights, for every eighteen parts of water decomposed, two parts of hydrogen will be freed and sixteen parts of oxygen, the combining equivalents of water molecules being in the ratio of one to eight. The action on the animal tissues is apparent at the negative electrode, which, when applied on the moistened skin, produces signs of local inflammation, swelling, redness, vesication and edema. When the current passes through the tissues with a negative electro-needle, a certain amount of water will collect around it. This may be considered due to a secondary formation, from the combination of hydrogen and oxygen the result of decomposition of the organic compound. This electro-chemic action is not limited to the place touched by the needle, but extends to a larger area. The tissue becomes white, swollen, slightly edematous, forming gradually, an eschara, which is detached in the form of a crust after some ten or twelve days. When the tissues are vascular the destruction is greater and more rapidly accomplished, the blood is coagulated, the blood vessels are cut through, and the infiltrating tissue remains without nutrient supply.

A weak current, applied through a needle, in a hypertrophied tissue, will have more effect if continued for a long time, than an intense current for a short time. Moreover the weak current will not cause any inflammation in the tissues, but will induce a destructive metabolism.

A few months ago a young lady affected with lupus of the face came under my treatment. Miss A. B., age 22, a blonde, with sallow and freckled complexion, blue iris, scanty hair, extremely sensitive and nervous, Her general health has been fairly good. Lupus began around the nose when she was 10 years old, and gradually extended to the cheeks, lips and on the nose. When she first came under treatment she was very emaciated, pale and had a slight cough. The examination of the chest did not reveal any infiltration of the lungs. Lupus nodules from the size of a pin head to that of a hempseed were scattered on the nose, causing it to appear red and thickly infiltrated. Both nostrils were infiltrated and swollen, completely closed and covered with thick crusts. The septum was equally swollen thick and infiltrated, the infiltration extending toward the lips, which were equally thick. Numerous nodules from the size of a pin head to that of a split pea, were scattered all over the cheeks. A large lupus nodule was on the edge of the superior lip, causing swelling of that part. The patient had received fifteen or twenty injections of tub-

[2] Berlin Klin. Wochenschrift, No. 33.
[3] Journal of Cutan. and Genito urinary Diseases, July, 1888.
[4] Monatshefte für Pract. Dermatologie, Band ix, No. 9.

erculin without any result. The nodules had been several times cauterized and scraped, but always with unsatisfactory results, and all this had made her so nervous that she would scarcely allow a close examination.

Internally she began to take cod liver oil and syrup ferri iodati; locally a salve was prescribed containing acid salicylic gr. xx, creosote gtt. xxx, vaselin ʒi. This was applied on a piece of lint twice a day. As the nostrils were completely closed with lupus tissue, I deemed it better to use the curette and remove the flabby hypertrophic tissue. This was easily done very much to the relief of the patient. The thick swelling of the lips, and all the small lupous nodules, on the nose and cheeks were not easily curetted, especially on account of the excitability of the patient. I had already used electrolysis with satisfactory results in cases of different growths of the skin, and I thought to try it in the lupus nodules. It is well known, that altered tissues and lupus tissue offer much less resistence to the electrolysis than a healthy one, so that currents of small intensity will be sufficient to disorganize the lupus tissue, without injuring the healthy one. I used a galvanic battery limiting the power of the current from twelve to fifteen milliamperes. The active pole is the negative or the cathode, and the positive anodes is only passive, therefore the needle is attached to the negative and the sponge to the positive which the patient takes in her hands. The needle is inserted into the lupus nodule as deep as it can go. The tissue swells, serum flows out, forming around the needle and gradually the affected point becomes white in appearance. The pain produced is very little and in case of too much sensitiveness it can be diminished by local application of ethylchlorid or applying a 5 per cent. solution of cocain to the ulcerated surface, or by local anesthesia with the method of Scheink.

The needle is left in the lupus nodule for one minute or longer, as I prefer a relatively strong current of 15 or 20 milliamperes continued for one minute to a too mild current of 5 or 6 milliamperes prolonged from five to ten minutes. The electrolytic action is not limited around the needle, but it extends to the whole nodule. For this reason I consider an ordinary needle to be sufficient, and the multiple needle electrode of Prof. Lange should be used only in exceptional cases. The idea of the application of electrolysis in lupus vulgaris is nothing new, as G. T. Jackson[5] referred to six cases of this disease treated by this method with encouraging results. Gardner and Lustgarten had already reported in the *Medicinishe Wochenschrift* of Vienna, on the treatment of lupus by electrolysis with the flat electrode. They, however, were using an electrode in the form of a button, which was applied on the surface, while Jackson used the needle inserted in the lupus nodule. Kaposi too mentions the use of the electrolysis in lupus vulgaris, referring to the experience of Groh, Behrend, Gardner and Lustgarten, but it seems without personal experience.

Recently, at the last International Medical Congress, held in Rome, Dr. A. Santi of Berne, "Contribuzione alla studio dell'Eletrolisi nella Dermatologia"[6] recommends very highly the use of electrolysis in lupus vulgaris. He had applied it often in those cases where nests of lupus tissue are concealed in the scars, or in the healthy tissue and can not be reached by other methods. He refers to the case of a man affected for over twenty years, treated by different physicians and specialists with various methods, but without benefit. Santi treated him by electrolysis and obtained brilliant results.

The applications were repeated every three days, for the reason that the lupus nodules were very numerous and she could not endure a long sitting. Therefore it took a long time to destroy all the nodules. If electrolysis causes pain it is not lasting and the operation can be repeated the following day without any objection from the patient. In the application of electrolysis the diminution of the infiltration in the tissues is remarkable. The nostrils and the upper lip were hard, swollen and thickly infiltrated. The electrolysis was applied, taking care to place the needle into the lupus nodules by the help of a magnifying glass; the following day the swelling had decreased considerably over the whole surface.

What we obtain by means of electrolysis in lupus is the destruction of the lupus tissue, without burning or destroying, by a mild hystochemic action, which removes the fluid contained in the cells of infiltration and causes a disorganization of its hystologic elements. The nodule is changed in its hard eschar, which is gradually detached from the healthy tissues and leaves a small and scarcely perceptible scar. Its action is not injurious to the healthy tissues, which are not affected by the mild current, but is expended on the tissue of infiltration. The needle inserted into the tubercle of lupus acts similarly to scarification, cutting through the blood vessels, which bring the nutrition to the cells, with the advantage of coagulating the blood. The scarifications have been recommended by L. Brocq[7] in the treatment of lupus vulgaris, followed by the cauterization with the galvano-cautery. In electrolysis we have combined the scarification and the galvano-cautery, without causing great pain to the patient, and therefore can be repeated, as the patient will not refuse a second treatment should it be necessary. Unna[8] expressed his opinion on the application of the Paquelin cautery, saying that in lupus it must compete with the sharp spoon, the scarification and the application of salicylic and pyrogallic acid. In my opinion, the actual cautery not only destroys the lupus, but also affects the healthy tissues, causes a deeper scar and although applied under local anesthesia, is looked upon with horror by the patient, who will not submit to its application a second time.

In conclusion, the local treatment of lupus vulgaris has in view the destruction of the nodule, which is done either by surgical means, scraping, burning, scarifying, or by chemic action, as by applications of lysol, pyrogallol, salicylic acid, sublimate, chlorid of zinc, etc. The methods are often combined. Unna,[9] for instance, introduces a scarifier into the lupus nodule and then sticks in a wooden plug covered with cotton saturated with a solution of 1 part sublimate, 4 parts carbolic acid and 20 parts of alcohol, which is left in place for ten minutes. Good results are reported from this method and no doubt when we have destroyed the infiltrating cells we obtain recovery from lupus. In my opinion, the treatment of lupus must be subordinated to the individual case, and according to it the method is chosen. Electrolysis gives good results in lupus, but on a large ulcerated surface the curette

[5] Journal of Cutaneous and Genito-urinary Diseases, November 1890.
[6] Atti dell XI Congresso Medico Internationale, Vol. v.
[7] Journal of Cut. and Genito-urin. Diseases, July, 1888.
[8] Monatshefte für pract. Dermatologie, Band ix, No. 9.
[9] Monatshefte für pract. Dermatologie, Band ix, p. 33.

is to be preferred. On the contrary, on a swollen surface, from the aggregation of several lupus nodules, the application of the electric needle causes in a few hours the disappearance of the swelling. Electrolysis acts very gently, destroying the tubercle by the combination of scarification with its hystochemic action. In cases of lupus where small tubercles are scattered, especially on the face, I find it the preferable method. It leaves a small and scarcely perceptible scar; I use a salve consisting of salicylic acid, grains 20, creosote, drops 30 in 1 ounce of vaselin; with this application the crusts fall off and the tubercles show plainly as whitish points. Each of the tubercles are then treated with electrolysis, continuing the application of the salve. When the necrosed tissue has sloughed off and the granulation commences the sites of the tubercles are touched every alternate day with a 5 per cent. solution of nitrate of silver, covering the surface with a salve of zinc, or boric acid, until recovery.

With this method I obtained perfect success in five weeks in the case under consideration. Two more cases are at present under treatment with similar results, showing that electrolysis is to be considered as a most valuable agent in the treatment of lupus vulgaris.

A CASE OF SYPHILIS IN A YOUNG GIRL; PROBABLY ACQUIRED FROM HER MOTHER.

Read in the Section on Dermatology and Syphilography, at the Forty-seventh Annual Meeting of the American Medical Association held at Atlanta, Ga., May 5-8, 1896.

BY HENRY A. PULSFORD, M.D.
SOUTH ORANGE, N. J.

I. M., came to me in November, 1893, to be treated for a large ulcer on the front of the left leg. She was then an undersized, sallow-skinned girl of 13 years, who had not menstruated. The ulcer, situated just external to the crest of the tibia, four or five inches below the patella, was fully two inches in diameter and had all the characteristics of a broken down gumma. The bone was not affected. At the same time there was found upon the left labium majus a suspicious group of superficial ulcerating papules. Except for a slight general enlargement of the lymph nodes there were no traces of previous syphilitic lesions. At the time, no satisfactory history of the case could be obtained. Under the combined influence of mercury and iodid of potassium the ulcer healed rapidly and the genital lesions disappeared.

In the course of the two years following, the patient again came under my care first for a subacute periostitis of the lower extremity of one tibia, then for a similar affection of the other, and finally for a gumma, probably subperiosteal, of the vertical portion of the frontal bone. All of these manifestations rapidly disappeared under treatment, their appearance being separated by comparatively long periods of good health. Since the disappearance of the last lesion, some six months ago, the girl has improved wonderfully in her general condition, having added several inches to her height, become plump, lost her sallow color and began to menstruate.

Notwithstanding the absence of the classical confirmatory signs, I at first considered the case as one of hereditary syphilis. The history, however, seems to make it probable that the disease was acquired in childhood.

The father of the girl is perfectly healthy, denies all venereal diseases, and has no evidences of syphilis. The mother was healthy at the time of the patient's birth, two years before which time she bore her first child, a healthy girl now alive and well. One healthy child born two years later died in infancy. There is no history of abortions or miscarriages. The patient in early childhood was perfectly healthy, photographs of the two children and the testimony of intelligent observers proving that up to the age of 4 or 5 years the younger child was as robust and almost as well developed as her older sister. About this time the mother began to be loose in her sexual habits, becoming estranged from her husband in consequence. Soon after this she contracted syphilis. The disease was neglected in its early stages, and probably was not recognized until four or five years later, when she entered the Orange Memorial Hospital for treatment of severe tertiary lesions. A year or two later she died. The failure in the child's health began about the time her mother acquired the disease; and although I could get no satisfactory evidence of an initial lesion or of early eruptions, the child was so thoroughly neglected at that time that such manifestations might easily have escaped attention. At the age of 7 or 8 years she suffered from an ulcerated sore throat which was called diphtheria, but might very well have been either the primary lesion of the disease, or a severe angina accompanying one of the early eruptions.

In conclusion, then, the facts that the father escaped infection, that three apparently healthy children were born at intervals of about two years, and that there were no abortions or miscarriages, seem to prove that the mother could not have been syphilitic during the uterine life of the patient, while there is every reason to conclude that she was infected some five years later. That the child was infected probably by her mother, but possibly by one of her mother's paramours, is by no means satisfactorily proved; but taking into consideration the woman's ignorance, her neglect of her own disease, and the dissolute life she was leading at the time, it is less incredible that one child contracted syphilis, than that the other was so fortunate as to have escaped infection.

DO GRAPE SEEDS CAUSE APPENDICITIS?

BY EDMUND ANDREWS, M.D.
CHICAGO.

The laity of Chicago have become infected with the idea that grapes are a dangerous fruit. They have received from some of our best physicians an opinion that grape seeds cause many, or perhaps nearly all of the cases of appendicitis occuring among us, and the occasional discovery of a seed in or near a perforated appendix adds to the alarm.

Nearly all the grapes consumed in this city are eaten in the months of August, September, October and November. If they cause any large number of cases of appendicitis, we would expect that disease to be most frequent during the grape eating season, or at least within a reasonable period after its close.

To settle this question, I have obtained statistics of the disease in Chicago for every month during the last fourteen years. My friend, Mr. Tracy H. Clark, a medical student, has been kind enough to examine the records of Mercy Hospital, of the County Hospital and of the City Health Office, and to tabulate the results.

Some difficulty was at first encountered in conse-

quence of conflicting terms used by different recorders to designate the same disease; but by the exercise of some care it was found entirely possible to correct these errors.

The cases of appendicitis thus collected number 3,709, and appear in the following table:

Table showing 3,709 cases of appendicitis occurring in Chicago during fourteen years; arranged by months. Taken from the records of Mercy Hospital, of Cook County Hospital, and of the City Health Office.

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
1882	9	6	11	10	8	14	8	12	5	9	7	11	110
1883	14	10	9	11	13	15	8	2	5	13	6	6	112
1884	5	9	11	15	8	13	11	11	12	12	6	10	123
1885	12	8	7	10	14	6	16	11	13	11	6	13	127
1886	11	12	12	10	5	11	15	16	15	10	11	8	136
1887	20	16	23	8	14	12	15	21	14	8	12	17	180
1888	25	25	21	14	20	13	18	25	10	14	12	14	211
1889	10	8	10	11	19	17	12	17	11	14	12	22	163
1890	13	19	31	25	13	13	13	27	9	25	20	23	241
1891	20	19	33	26	39	21	29	27	29	24	31	27	345
1892	24	32	49	35	34	28	56	36	40	41	34	36	445
1893	25	35	40	42	54	41	56	57	53	39	27	46	515
1894	53	42	43	45	48	51	46	37	37	36	24	23	480
1895	42	46	62	48	52	51	53	35	42	33	35	32	541
Total	983	287	392	310	336	306	356	344	305	289	243	298	3,709

Statistics of this class do not afford conclusions of unerring certainty but they are sufficient to show that in over 3,700 cases extending over a period of fourteen years there was no increased frequency during the four grape eating months. In fact, there was a slight diminution, due possibly, to the fact that in these fruit consuming months there is on the average, less constipation and impaction of the colon than in other parts of the year.

There is a mechanical reason why it is difficult for a seed or other foreign body to enter a healthy appendix. This organ is by no means a "functionless" one as White and others have asserted. Though small, it is richly supplied with muciparous glands, which secrete a pretty large supply of a tenacious mucus like that of the fauces and of the rectum. Its use is to lubricate the cecal pouch so as to facilitate the gliding on of the fecal mass, and prevent its impaction in the head of the colon. As long as the appendix is in a healthy condition, this tough mucus is slowly moving forward into the cecum, and it is difficult for seeds or any other small foreign bodies to enter in opposition to its movement; but if a perforation occurs the motion is reversed. The mucus now flows into the abscess or peritoneum, drawing with it any seeds, bits of fecal matter, or other foreign bodies presenting themselves. I suppose this accounts for the occasional presence of these bodies when found in operations and autopsies. The foreign bodies rarely cause the perforations, but they merely follow the reversed current after the perforation has occurred.

Where a chronic fistula follows the attack it not unfrequently continues to transmit such objects for years, just as occurs in fistulæ in ano, and in fecal fistulas of various other locations.

It is a pity that this popular delusion about the danger of grape seeds has gotten possession of so many minds in Chicago, for it causes large numbers of our citizens to deprive themselves of the healthiest and most agreeable of all our fruits.

The majority of authors, while not denying the possibility of appendicitis being induced by foreign bodies, yet think this cause is a rare one. They believe that catarrhal inflammation is the origin of most cases, and that in others perforating ulcers occur from typhoid disease, from tuberculosis, from dysentery, from calculi of the canal and from other maladies. A few writers, however, believe in the frequent influence of foreign bodies. The following list of opinions shows the conflicting character of professional thought on the subject.

Helferich of Greifswald, says that catarrhal inflammation is the usual cause of the disease, and that foreign bodies do not ordinarily have anything to do with it.

Fowler holds a similar opinion. He reports 200 laparotomies of which only two showed any true foreign bodies.

White of Philadelphia, thinks appendicitis is caused by the organ being a "functionless structure of low vitality."

Pilliet of Paris, on the other hand, finds by microscopic study, that it is rich in glandular structure, which in a state of inflammation resembles that observed in follicular pharyngitis.

J. C. Lange of Pittsburg, thinks the disease arises from catarrhal inflammation, and not from foreign bodies.

W. Schell of Terre Haute, attributes many cases to typhoid infection. He says that of perforating typhoid ulcers, 10 to 30 per cent. are located in the appendix.

Forty-five years ago, when this disease was still called typhlitis, Favre of France, proclaimed with the positiveness which men were accustomed to assume at that time, that perforations of the appendix were always due without exception to foreign bodies.

Six years ago, Lewis A. Stimson asserted that in ten cases of excised appendix only two showed any foreign bodies or fecal matter of any consequence, and in neither of them is it alleged that the foreign material caused the disease.

Jules Simon thinks the appendix is liable to ulceration from dysentery, typhoid fever, or tuberculosis, but that foreign bodies, bits of ill-digested food and fecal matter have some connection with the condition.

Jalaguier of Paris, thinks typhlitis (which is usually appendicitis) is due in the immense majority of cases to the inflammation caused by the impaction of feces in a constipated colon, and very rarely to foreign bodies in the cecum. He seems to confound typhlitis and appendicitis together, as was common a few years ago.

It is a hopeless task to try to reconcile all these contradictory opinions, but the following conclusions are reasonable and mainly true.

1. The appendix is not a "functionless" organ. It produces every day a quantity of tenacious mucus to lubricate the cecum, and by thus facilitating the fecal movement prevents impaction in the head of the colon.

2. The current of this tough mucus is toward the gut, hence seeds and other foreign bodies can not enter the appendix in opposition to the movement as long as the organ is in a healthy condition.

3. From various causes perforations may occur in the appendix. The current of mucus is then reversed and flows outward, and small bodies in the colon may thus be drawn into the appendix, or even carried through it into the abscess or the peritoneum without being the cause of the perforation.

4. There is no scientific proof that grape seeds are any more dangerous than the hundreds of other small objects which we daily swallow with our food.

2520 Prairie Avenue.

THERAPY OF VERATRUM VIRIDE.

Read before the Pennsylvania State Medical Society, 1895.

BY JOHN M. BATTEN, M.D.

PITTSBURGH, PA.

Veratrum viride slows the heart's action and makes it more feeble. It was first used by Magendie and Andral in physiologic experiments in 1821. Meisner first discovered it in the seeds of veratrum sabadilla in 1818. Bardsley first used it in rheumatism and dropsy in 1826. The curative effect of veratrum viride lies in its influence on the heart to retard its action in acute inflammatory diseases wherein the pulsation is very much accelerated. I have been able to produce the physiologic effects of the drug in cases of inflammatory diseases with a dose of Norwood's tincture not larger than three drops every three hours. By this dose I have been enabled to reduce the pulse beat twenty or thirty in a minute, especially when the high pulse rate has been caused by inflammation. In inflammatory rheumatism I have had good results with this drug by keeping the pulse at or near normal until convalescence began. In the early stages of measles, scarlet fever, and in some cases of smallpox, it acts favorably in governing the heart's action. In typhoid fever where the heart's action is irregular, I have thought that this drug in one drop doses aided in steadying it. For this purpose I have in the treatment of typhoid fever continued the drug in one drop doses until convalescence set in. In all acute inflammatory diseases of the chest it is an excellent remedy; in acute pneumonia, pleuro-pneumonia and pleurisy. If in acute pneumonia the pulse can be kept at or near normal by this drug in the stage of congestion, we may often be able to jugulate it or prevent it from entering upon the hepatized stage. Even in a sthenic case in the second stage veratrum viride acts well. The heart's action is lessened without loss of blood as in venesection.

"Should we Bleed or not Bleed in Acute Pneumonia?" was the title of a paper read by a gentleman before the AMERICAN MEDICAL ASSOCIATION at its session held in Milwaukee, Wis., in 1893. In the discussion of the paper opinions were diverse. One gentleman advocated veratrum viride in the treatment of acute pneumonia. He had such entire confidence in the treatment of the disease with this drug by keeping the pulse at or near normal, that he made the bold assertion that all cases could be jugulated, or cut short, by this mode of treatment.

Feb. 27, 1896, I attended William McC., male, aged 46. The disease (pneumonia) was about entering the second stage, both lungs were involved. The pulse was 82, temperature 102 degrees, respiration 32. The expectoration bloody mucus. I prescribed veratrum viride, three drops every three hours. February 28, expectoration rusty, mixed with blood, temperature 101.5 degrees, respiration 30, pulse 80. I prescribed in addition to veratrum viride, gr. 1-40 of nitrate of strychnia every eight hours. February 29, temperature 99 degrees, respiration 28, pulse 79. Sputa less rusty. March 1, pulse 78, temperature 99.5 degrees, expectoration rusty. After this during the course of the disease, etc., neither the pulse nor temperature rose above normal. On March 5 the rusty sputa disappeared. On the 16th patient was sitting up in bed, and made rapid convalescence.

In the same house, on March 12, I attended a male aged 66, entering the second stage of typhoid pneumonia; both lungs were involved. Tongue thickly covered with a brown coat, red around the border; delirious; temperature 103 degrees, respiration 30, pulse 109; rusty sputa. I treated him in the same manner as the former patient till the evening of March 15, when he had an attack of heart failure. I withdrew the veratrum viride and substituted whisky, continuing the strychnia. From this time, during the course of the disease, the pulse did not rise above 90. The respirations for four days after that of my first visit were 36, 35, 35 and 38 respectively, then receded gradually. March 20 it was 30, and in a few days down to 19. The pulse became gradually slower, and March 22 it was below normal. The patient had convalesced April 6.

The heart failure of the second case was caused by the cumulative effect of the veratrum viride. It is my opinion that the failure of the heart acted favorably on the course of the disease, as the turning point seemed to be established at this time. In both of the cases I enveloped the chest in oil silk jackets.

RE-INFECTION IN CONSUMPTION.

Read before the Mississippi Valley Medical Association, St. Paul, Sept. 16, 1896.

BY JOSEPH MUIR, M.D.

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That but a comparatively small percentage of consumptives actually succumb to a first attack of tuberculosis has been time and again demonstrated through necroscopic examinations. The question is no longer an open one. As a matter of statistics, indeed, not only is a first attack not fatal, but a large proportion of patients recover from it and their subsequent death is found to be due to causes disconnected with any pulmonary lesions. If that is so—if under reasonably auspicious circumstances there is a strong probability of a cure being effected where the lesion is yet in its initial stages, then to what cause or causes are subsequent relapses to be attributed?

The ordinary received idea of the re-development of the tubercle can not certainly explain all or even the major part of the phenomena, for in a large number of cases the bacilli are, by postmortem examinations, found to have been utterly discharged from the body. There must, therefore, be some other explanation, and the following considerations are offered, not to announce an established certainty, but to suggest a theory that may serve to reconcile many of the seemingly inconsistent cases which the practitioner encounters in his daily practice.

In the first place, there can be no serious dispute that in the vast majority of instances primary infection is owing, not to inherited tendencies but to external conditions. Were this not so, the influence of environment on turberculous conditions would not be so palpable and important as it is.

Among the rich, where the luxuries of exceptional food and frequent change of air are always accessible, very few cases of consumption prove intractable. The advantages which they enjoy are so far sufficient to immunize the lung tissue against further attack, that a life time may pass without any advance being made by the virus. Frequently, indeed, a permanent cure is affected.

But among the poor the case is very different. The incessant struggle for life demands their presence in the dust-laden atmosphere of labor; in the badly ventilated sweat-shops; in the imperfectly drained tenements; in the closely packed, squalid quarters of poverty. Every breath they draw, almost every particle of food they eat, contributes a little to the poison that renders the tubercle bacilli the dread of civilization. It is there, in these disease-laden districts, that primary infection takes place.

Then, in most cases, comes a period of comparative comfort at a hospital. The patient enjoys good food and fresh air, and the ravages of the dread destroyer

are temporarily stayed. Perhaps, indeed, the bacilli have been permanently expelled.

But what then? Consumption differs from other infectious diseases, such as smallpox for instance, in that the former, unlike the latter, does not immunize the sufferer from further attacks. On the contrary, the primary lesion renders the patient peculiarly liable to fresh invasions. The damaged lung has lost some of its elasticity and the natural fortresses against disease have been more or less weakened. If then the unhealthy conditions above referred to were sufficient to infect a healthy lung, how much more likely are they to overcome a damaged one? The patient's return to the old life brings with it a return of the old disease; another sojourn at the hospital, another return to the dreary drudgery; again and again until the whole fatal story is told.

This is the history of the consumptive. Now it will be practically impossible to prove in any given case, that the progress of the disease is due, not to re-development, but to a process which I have more or less faintly demonstrated, called "re-infection." The very nature of the subject suggests the obstacles to such a concrete demonstration, because, whether death resulted from re-developmdnt or re-infection, the bacilli are nevertheless present in the lung to frustrate any further inquiries. Still, as I have shown, if permanent cures are possible, and if patients discharged from hospitals as permanently cured, suffer sudden relapses on their return to the same conditions which were originally responsible for the first outbreak of the disease, the theory of re-infection in such cases is based certainly on substantial grounds.

The so-called doctrine of re-development is further inconsistent with the circumstance that patients, in order to secure a change of air, engage often in outdoor vocations exposed to the elements, frequently subsisting on indifferent and sometimes insufficient food. What conditions more favorable to re-development than these? Yet, as a matter of common knowledge, these cases present the largest percentage of permanent cures.

And the reason is extremely simple. First, the change of air and labor harden and refresh the tissues so as to render re-attack less probable; and, second, the respiratory impurities are no longer present to supply the conditions necessary for the vitality of the bacilli. These facts just noted can, it seems to me, be consistent only with the hypothesis of re-infection.

It only remains to state a few precautions which may be exercised to prevent re-infection.

1. A thorough disinfection of the premises occupied by patient.

2. A destruction of the sputum, not so much to prevent infection to the other inmates of the house, as to preclude the possibility of re-infection on the part of the patient—to protect the patient, as it were, against himself.

128 West Forty-fifth Street.

Vaginal and Uterine Septum.—Beckmann describes in the *St. Petersburg Med. Woch.* of October 17, the case of a patient who had a septum in both vagina and uterus, dividing the genitalia completely in two, but notwithstanding, bore a healthy child with an apparently normal delivery. As the child was born the cervical septum was ruptured, and the vaginal pushed to one side with a slight tear.

THE DEGENERATE JAWS AND TEETH.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-seventh Annual Meeting of American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY EUGENE S. TALBOT, M.D., D.D.S.

FELLOW OF CHICAGO ACADEMY OF MEDICINE.

(*Continued from page 1140.*)

Crescent shaped bitubercular, tritubercular as well as all deformed teeth tend to the cone shape. The malformation of these teeth results from pre-congenital trophic change in dentine development. It consists in dwarfing and notching the cutting and grinding edges of the second set of teeth, a familiar example is the so-called Hutchinson's teeth, usually referred to a syphilitic etiology. Hutchinson's position has, however, been more strongly stated than his words justify since he admits that in at least one-tenth the cases luetic etiology could be excluded.[8]

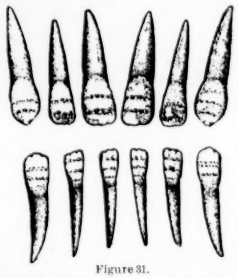

Figure 31.

Lues only plays the part of a diathetic state profoundly affecting the maternal constitution at the time of dentine development. While these teeth may be due to secondary result of lues, they do not demonstrate luetic heredity.

Figure 32.

In Figure 31 are seen the teeth of an individual affected with constitutional disease and by referring to Figure 15 we shall see that the defective lines represent the respective ages of 2½, 4 and 5 years. The degree of pitting will depend, as a rule, upon the severity of the constitutional disorder. In the case just cited, however, although nutrition was but slightly disordered each tooth shows a tendency to conate. Not infrequently are cavities extended completely through the tooth. The cusps of the (permanent) first molars calcifying at the first year are usually attacked also and arrested in development, producing the cone shape. These data together with dates of eruption of the temporary and permanent teeth, furnish an absolute basis for calculation as to excessive or

[8] American System of Dentistry.

arrested development of tissue. Figure 32 shows a very degenerate jaw with cone-shaped malformed bicuspids. The right lateral missing, the cuspids are erupting in the vault and the dental arch is assuming a V-shape. The jaw as a whole is marked arrest in development. Figure 33 shows "Hutchinson" teeth. Were the first molars visible they would present marked contraction of the outer surface with a malformed center. Referring again to Figure 15 we observe that trophic changes affected the system at the age of birth. The outer surface exhibits a tendency to take the cone shape. Figures 34, 35, 36, 37 and the molars in Figure 30 exhibit malformations, assume the cone shape and the center frequently associated with this type of teeth. The coincidence in from between "Hutchinson" and malformed teeth and those of the chameleon, demonstrates that tropho-neurotic

Figure 33.

change produces atavistic teeth. Figure 38 illustrates the tendency of human bicuspids (when there is no antagonism) to rotate one-fourth round, thus again demonstrating the atavistic tendency toward the teeth of the chameleon. Figure 39 exhibits extreme atavism; all teeth anterior to the molars are cone shaped. The third molars are missing and would probably never erupt. In Figure 40 appears more marked atavism. The upper and lower anterior are both cone-shaped and the superior first bicuspid exhibits tendency thereto. The right superior second bicuspid, second and third molars, the right inferior first and second bicuspids, second and third molars are missing. The same condition probably exists on the left side. The space in the upper jaw is due to the insufficient width of the teeth. Alternation of teeth in the upper and lower jaw is a reptilian feature.

Figure 34.

Figure 35.

Figure 36.

Figure 37.

Figure 30 furnishes an excellent illustration of the principles hereinbefore advanced.

In degenerate jaws the influence of the factors of the differentiation theory are also demonstrated. Every tooth in the jaw at one point or another may display rudimentary cusps. On the incisors they are always to be found on the lingual surface.

Figure 41 illustrates the centrals with two rudimentary cusps, the laterals with one and the cuspids with one also. Figure 42 represents cusps upon the lingual surfaces of the molars. The cuspids are not unlike the lower bicuspids with a rudimentary lingual cusp.

Thompson remarks: That there is a gradation from central incisors toward the bicuspids in evolution. This grading of form is not observed as we pass from the cuspid to the bicuspid in man. But we must remember that the cuspid often presents a cingulum on the lingual face that inclines it toward the bicuspid forms in lower mammals like the mole and that the first premolar or bicuspid is then more caniniform, the inner tubercle being much reduced. This inner tubercle is very variable and erratic as to its position. It appears as far front as the centrals and is often present on the lingual face of the laterals of man. The lingual tubercle is very constant on the first bicuspid of man and is well developed as the buccal. But in some lower forms, as in the lemurs, it is quite deficient. It attains the highest development only in the anthropoids and man. Considering these stages

Figure 38.

of development, the grading from the cuspid to the bicuspid forms was more gradual in the earlier species than in the later, where the individual teeth have taken on special development.[9]

I have the skull of a degenerate girl who died from tuberculosis at 13 years. Among other stigmata is a cusp on the external surface of a right inferior cuspid. This is a decidedly strong point in favor of the differentiation theory. Another strong point in favor of this theory is shown in Figure 43, where every tooth is present and a most remarkable display of cusps occurs. The cusps upon the cutting and grinding edges are not obliterated. Commencing with the left superior central incisor three cusps are present with a rudimentary palatine cusp. The laterals also show three cusps, while the cuspid has two very distinct. The first and second bicuspids have tubercular cusps, they being in line. The buccal cusps upon the molars

Figure 39.

two to three and are still in position. The palatine cusps are worn away. The same is the case upon the opposite side except that the cuspid has cusps that have fused together leaving a small projection upon the mesial side and a rudimentary palatine cusp. The cusp upon the third molar is lost. In another case (Fig. 25) the primitive cone teeth are seen trying to shape themselves into incisors. The lateral incisors, cuspids and bicuspids are still cone-shaped. The first permanent molar is fairly formed, while the second molars are still in a primitive condition. Thus the points made by Osborn are nicely demonstrated in the two last illustrations, namely, the triangular-shaped crowns and the leveling of cusps.

There is abundant evidence to show that degenerate teeth unite in twos, threes, fours and fives as indicated in the concrescent theory. These single cone-

[9] Dental Cosmos, May, 1894.

shaped teeth grow together and form bicuspids and molars. The germ of any two normal teeth may intermingle and unite; not only are the crowns found united with separate roots, but crowns and roots are united throughout.

Figures 44 and 45 show two superior central and lateral incisors joined together throughout the entire length of crown and root; Figure 46, two lower incisors are united throughout; Figure 47 shows a cuspid with two roots; Dr. George T. Carpenter of Chicago has a right superior second bicuspid with three well-formed roots; Figure 48 illustrates two bicuspids united at the crowns; Figure 49 shows two molars perfectly united; Figure 50 illustrates central and lateral incisors of the permanent set perfectly united; Figure 51 shows two molars united; Figure 52 a molar and supernumerary united, the supernumerary taking the cone shape with deformed center. Figure 53 shows

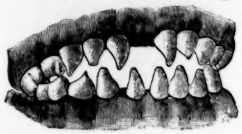

Figure 40.

three malformed teeth, each conated and completely united.

It is not uncommon to find three molars united together, as for instance the second, third and supernumerary molar. Dr. C. V. Rosser, Atlanta, Ga., has two small molars and a supernumerary cuspid perfectly united from crown to root and these three further united to the roots of a well formed molar. Thus we see the concrescence theory is fully established.

That human jaws, like the human ears, are degenerating is a matter susceptible of demonstration by actual measurements. Mummery examined the skulls of 200 Britons and Roman soldiers in Hythe church, Kent, England. He found the narrowest width 2.12

Figure 41.

inches, the highest 2.62, with an average of 2.50. The width of jaws of 402 British soldiers to-day is: narrowest 1.88, widest 2.63, average 2.28. The highest width was very rare, only eight measured 2.50. The jaws of the mound builders compared with the existing cliff dwellers show similar results, the average width is about 2.50 inches. This is also true of nearly pure negro races. Measurements of normal jaws of 855 Italians of central Italy were, narrowest 1.88, widest 2.63, average 2.17. Measurements of normal jaws of 4,935 Americans gave the following results, narrowest 1.75, widest, only one case, 2.56, average 2.13. If in the highest type of physical man the width of the upper jaw from the outer

Figure 42.

surfaces of the first permanent molars near the gum margin was originally 2.50 inches in diameter, the jaw of people now living in the same locality is from 0.25 to 0.33 inches smaller, although the jaw has been growing smaller, since there are no breaks or deformities in the contour of the dental arch this must be regarded simply as an adaptation to environment and not degeneracy in the proper sense of the term. The degeneracy of the jaws on which I would lay special stress are those in which deformity has resulted from inability to adjust structure to a changing environment. When arrest of development so takes place

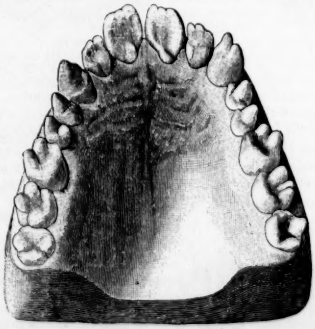

Figure 43.

that deformities of the dental arch results, the jaws vary from 2 inches to 1 inch in width. As a rule the teeth are the same size to-day they were 3,000 years ago. This is due to the fact that their growth is ante-natal and not influenced by post-natal systemic changes. The jaws do not contract as a result of mouth breathing, that erroneous but favorite hypothesis with so many dentists and laryngologists. If the jaw can be arrested and be smaller in circumference than the teeth, a break takes place in the dental arch

and deformity results. Two types of deformity occur, the V-shaped arch and the saddle arch. All other types of deformity not due to local causes are modifications of these two. These deformities always occur with the second teeth only. They are never seen before the sixth year, when the second set begin to erupt, and are complete with development of the second molars at twelve. They may become more exaggerated later in life from want of room, the eruption of third molar

Figure 44.

Figure 45.

Figure 46.

Figure 47.

Figure 48.

and want of harmony in relation of the two jaws when closed.

There are three characteristics of the normal arch. Independent of temperamental peculiarities the line extending from one cuspid to the other should be an arch of a circle, not an ange or straight line; the lines from the cuspids to the third molar should be straight, curving neither in nor out, the sides not approximating parallel lines. Absolute bilateral uniformity is not implied in this, as the two sides of the human jaw

Figure 49.

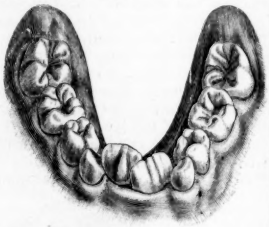
Figure 50.

Figure 51.

are rarely if ever wholly alike. A uniform arch necessitates a uniformity of development between the arch of the maxilla and the arch of the teeth and a correct position of the individual teeth in their relation to each other. When there is inharmony of development between the jaw and the teeth, as may happen when one parent has a small maxilla with correspondingly small teeth, and the other a large one with correspondingly large teeth, if the child inherits the jaw of one and the teeth of the other irregularities must follow.

Figure 52.

Figure 53.

Such difference in diameter between the arch of the maxilla and that of the crowns of the teeth is a constitutional cause of irregularity. Whenever there is a difference between these diameters the line formed by the teeth must either fall outside or within the arch of the maxilla and irregularities of arrangements result. The primary divisions of irregularities are the V-shaped and saddle-shaped arches. We have the V-shaped variety (Fig. 54)[16] (one of the typical forms), where the apex of a triangle is formed by the incisors, the base of the triangle being a line connecting the two first molars. If, because of premature or tardy extraction, the first molar moves forward or the coincidence of the arch of the maxilla and the arch of the crowns of the teeth in trying to accommodate itself to the lesser arch of the maxilla, becomes a broken line forming an angle at the incisors. This angle results from two causes, the thinness of the

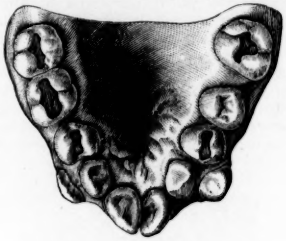
Figure 54.

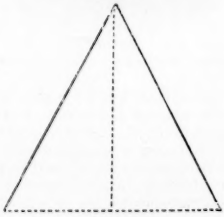
Figure 54.

process at this point and the diminution of resistance which must follow.

(To be continued.)

SELECTIONS.

Central Amblyopia an Early Symptom in Tumor of the Chiasm.—Mr. Nettleship, president of the London Ophthalmological Society, recently addressed that society in regard to ten cases seen by him in which failure of vision, at or near the center of the field in both eyes with little or no early ophthalmoscopic change, occurred in women. Three of them turned out to be cases of ordinary tobacco amblyopia, and in one it seemed probable that alcohol was the cause. Some five cases remained in which there was no reason to suspect a toxic cause and in which later events made it probable that some intracranial disease had caused the visual failure. Three of these patients had died with cerebral symptoms and in the fourth a post-mortem examination revealed a cystic tumor involving the chiasma, optic tracts and other parts at the base of the brain. The loss of central field in the earlier stages was more abruptly defined and less constant in position than in tobacco amblyopia and the symmetry was less precise both in time and degree than in the latter disease. In a later stage there was mental failure, loss of memory and irritability, with occasional headache and varying paralysis of one or more ocular muscles. The changes at the disc only amounted to pallor of the outer half until a late stage of the disease. If these cases were seen at an advanced stage the visual field would often have the form

[16] While the general outlines of the jaw and teeth are the same, in no two cases are they exactly alike. The cuts therefore are not drawn from actual cases, but are ideal diagrams of typical cases.

of a temporal hemianopia more or less. The case in which he had obtained a postmortem examination was that of a lady whose sight had failed while she was suckling her fourth baby. She had a black spot before the left eye and later one before the right. There was a central scotoma of oval shape beginning just outside the fixation point and extending about 20 degrees outward. There was no peripheral loss of fields. Her vision and mental condition got worse and she died after about three years. At the postmortem examination the brain was a good deal flattened on both sides. At the base there was a large membranous sac filled with fluid lying on the sella turcica and extending forward to the cribiform plate of the ethmoid. The wall of the cyst was loosely attached to the hinder part of the frontal lobe, to the median part of the temporosphenoidal lobe and to the hook of the uncinate convolution; it reached back as far as the middle of the pons. The chiasma was incorporated in the front wall of the cyst, the right optic tract could be traced back to the pulvinar, the commissural fibers could be followed a short distance toward the other side, as also the fibers which pass to the cerebrum. The left optic tract could not be found; it was so flattened as to be unrecognizable.

Dr. Mark Akenside (1721-1770).—The *Medical Times*, London, July 18, treats of one of the great medical faculty of St. Thomas's Hospital, Akenside, who was celebrated as a poet, philosopher and elegant scholar. His manner was solemn and reserved, his temper was irritable, and, despite Lettsom's opinion to the contrary, yet benevolent. Hardinge described his manner as most unfortunate: "He looked as if he never could be understood." He was no wit, and being devoid of humor was impatient of jests. His memory was powerful, his life "marked by a course of undeviating rectitude." His fame rests chiefly, however, on his poetical character. His "Pleasures of the Imagination" has been called "the most beautiful didactic poem that ever adorned the English language," though Dr. Johnson said he could not read it through. Lettsom left a manuscript description of his teachers, and he speaks of Akenside as a most supercilious and unfeeling man: "If the poor affrighted patients did not return a direct answer to his queries, he would often instantly discharge them from the hospital. He evinced a particular disgust to females and generally treated them with harshness. It was stated that this moroseness was occasioned by disappointment in love." Lettsom thus describes his personal appearance: "One leg of Akenside was considerably shorter than the other, which was in some measure remedied by the aid of a false heel. He had a pale, strumous countenance, but was always very neat and elegant in his dress. He wore a large white wig and carried a long sword." Lettsom never knew him to spit, nor would he suffer any pupil to do so in his presence. He would make patients precede him with brooms to clear the way and keep other patients from coming too close, and Richard Chester (a governor of St. Thomas's) once seeing this ceremony, reproved him with the words: "Know that thou art a servant of this charity." Akenside was once greatly incensed by one of his surgical colleagues, who disgusted with the poet's absurdities took what is vulgarly called "a good rise out of him." Akenside asked this gentleman, a Mr. Baker, what he intended to do with one of his sons who was weak-minded through epilepsy. "I find he is not capable of making a surgeon so I have sent him to Edinburgh to make a physician of him," replied Baker, and Akenside refused to speak to him again for long after.

Akenside belonged to a period when measured lines and stately verse were more admired than beauties of imagination and language gained greater admiration during his lifetime. Keats suffered neglect but his fame as a poet is immortal. Akenside on the contrary enjoyed his eminence while alive and is now well-nigh forgotten.

Akenside was born at Newcastle-on-Tyne, on November 9, 1721. His father was a Presbyterian and intended his son for the ministry but, like William Hunter, the mistress he preferred was medicine. Entering as a pupil at Edinburgh in his nineteenth year Akenside remained there two years, becoming much distinguished for his oratorical powers at the meetings of the medical society. From Edinburgh he migrated to Leyden, where after a stay of three years he took his degree of Doctor of Physic on May 16, 1744. His death took place in 1770.

Calomel in Diphtheria.—In the *American Therapist*, October, Dr. Lawrence F. Flick relates an experience in his own family which convinces him of the power of calomel over diphtheria. Our space will not admit of a more complete recital of his experience than is given below, but there will be many practitioners who will find unusual interest in the full paper:

All the children made a good recovery and were declared sterile within about ten days from the time the calomel treatment was begun. In addition to the calomel, of which from a sixtieth to the hundredth part of a grain was given every fifteen minutes, night and day, large doses of strychnin, whisky and digitalis were given at short intervals. This constituted the entire treatment. All of the cases showed great pallor and much prostration, but these were the only symptoms that occurred throughout the duration of the disease which could indicate severity of attack. Cleaning out of the nose and dusting with calomel constituted the local treatment.

In the second youngest child a recrudescence of the nasal symptoms also took place after several days, with a rise of temperature and depression of heart action. Although there was no nasal discharge, cleaning out revealed the presence of a small amount of purulent matter. After thorough insufflation the temperature became normal and all the symptoms again subsided. In both cases we now kept up the insufflations regularly and both rapidly advanced to recovery.

Another surprising effect of the calomel and a further evidence of its power over the disease was its action upon the enlarged glands. In the two youngest children the enlargement of the glands disappeared with the improvement of the nasal condition, and this was as expected. In the third child we did not recognize the nasal condition at first and we therefore did not use insufflation. In her case the glands became exceedingly large and painful, and although we gave the calomel internally and applied a solution of europhen in oil externally there was apparently no amelioration in their condition. Finally, reasoning from analogy from the other cases, we began insufflation and immediately the swollen glands decreased in size and in a few days were normal.

As to the mode of action of the calomel when used in this way in the treatment of diphtheria, I was at first inclined to think that it was by stimulation of cell action in the throat, but these recent experiences leave no doubt in my mind that it is by local germicidal action. The frequent repetition of the dose keeps up a constant sterilization of the soil, and the smallness of the dose prevents evil constitutional effects of the calomel. In no other way can be explained the failure of the action of the calomel upon the membrane of the nose when given by the mouth alone and its speedy action upon the nose when used by insufflation. The phenomenal action of the calomel upon the membrane of the baby's ear points to the same conclusion.

It was a matter of no little surprise to me to find that calomel was not absorbed by the nasal mucous membrane. From four to five grains of calomel a day by insufflation produced no action upon the bowels so long as the occlusion of the nasal passages prevented the calomel from passing into the pharynx, but as soon as insufflation was attended with the passage of the calomel into the throat, as could be determined by the cough set up by inspection of the throat, it was followed by purging.

So far as my experience enables me to say anything about the size of the dose of the drug to be given by the mouth, I think the best rule to follow is to give as much as can be taken without setting up constitutional effects. I usually begin with a sixtieth of a grain and go up or down according to results. If the bowels become loose I decrease the dose, and if they are constipated and I see no effect upon the local conditions in twelve hours I increase the dose. There seems to be a remarkable tolerance of mercury in diphtheria, and this seems to grow as the drug is given. I have reason to believe that a tolerance for the drug is also established by the disease, for I have found

it necessary to give larger doses in recrudescence of the disease than in the beginning of the attack.

The drug can best be given rubbed up with sugar and should be placed dry on the tongue. The secretions of the mouth will promptly distribute it over the pharynx. While the child is asleep the powder can be placed inside of the lips without awakening it. I have found no trouble in having the medicine administered every fifteen minutes, night and day, and I have in no case found it necessary to have the child's sleep disturbed.

A Summary of Dr. Waldemar Haffkine's Work Against Cholera.—The following sketch of the life of the distinguished cholera expert has been compiled by Mr. Ernest Hart, editor of the *British Medical Journal:*

Waldemar Mordecai Wolff Haffkine comes of a respectable Jewish family, and was born at Odessa in South Russia, on March 15, 1860. At the age of 12 he entered the Gymnase of Berdiansk, and from the very first the bent of his mind was in the direction of science, and rested on a firm foundation of fact that could be tested by direct experiment. This determined Haffkine's career. In 1879 he entered the University of New Russia, which has its local habitation at Odessa, as a student in the Faculty of Science. In 1883 he took his degree of Doctor of Science. The path of Academic glory was, however, closed to him on account of his Jewish birth. But although he could not hope for a professor's chair he remained in the University for five years working in a laboratory fitted up for his special use in connection with the Zoological Museum of the University of Odessa. Haffkine fully justified the liberality of his patrons by the truthfulness of his work. He grappled with difficult problems of the fundamental phenomena of organic life, and he opened up new and highly promising lines of original research.

At the beginning of 1888 Haffkine was appointed assistant to Dr. Schiff, professor of physiology in the University of Geneva, and about the middle of 1889 he found his true sphere of work in the Pasteur Institute of Paris. In 1891 he had so far progressed that when Prince Damrouy, brother of the king of Siam, called on M. Pasteur and asked him to supply a remedy for cholera, the illustrious scientist turned to Haffkine for aid. A few months later Haffkine's first paper on the subject was given to the world.

In 1892 M. Pasteur applied to the Russian government for leave to test the method in the dominions of the Czar, where cholera was then raging, but the request was not acceded to. M. Pasteur next asked permission of the king of Siam, where no year passes without the whole country being invaded by the disease. In the meantime, however, Lord Dufferin, the British Ambassador in Paris, had suggested that the place where the experiment could best be tried was the so called endemic area of Bengal. Lord Dufferin, who during his brilliant career as Viceroy of India had always shown himself alive to the importance of what Carlyle called "the condition of the people question," took the liveliest interest in the matter, and urged it on the attention of the Secretary of State for India. At the same time the Russian Ambassador to France and others commended Haffkine to the British government. He began his operations in India in April, 1893, and continued vaccinating all sorts and conditions of men and women till the end of July, 1895, a period of twenty-nine months. During that time he vaccinated 294 British officers, 3,206 British soldiers, 6,629 native soldiers, 869 European civilians, and 125 Eurasians. The vaccinations were not in any way forced upon the people; no official pressure was brought to bear upon them; only those were inoculated who expressed a wish to be so. Mr. Haffkine's work was greatly facilitated by the fact that the principle of protective inoculation against infectious disease is claimed by the natives of India as a discovery of their own. At Calcutta, up to July 15, 1895, Mr. Haffkine vaccinated 4,397 persons. Opportunities for comparing the liability of cholera of vaccinated as compared with unvaccinated persons, living under precisely similar conditions, presented themselves in thirty-six houses. In these thirty six the total number of inmates was 521; of this number 181 were vaccinated and 340 were not. Among the non-vaccinated persons there were altogether 45 cases of cholera, of which 39 ended in death; among the vaccinated there were only 4 cases, all fatal. These figures show that the non vaccinated persons were, roughly speaking, six times more liable to death than the vaccinated. In these cases no allowance has been made for the time that has elapsed since the vaccination. It is found, however, that the full protective power of the vaccination does not manifest itself until about a week after the material has been introduced into the system. If the figures are corrected in accordance with the fact, it is found that vaccinated persons are twenty times safer from attack and eighteen times securer from death than the unvaccinated. One instance which particularly struck Dr. W. J. Simpson, the distinguished health officer of Calcutta, was the following: About the end of March, 1894, two fatal cases of cholera and two cases of choleric diarrhea occurred in Katan Bagan Bustee, in a population grouped around two tanks. This outbreak led to the vaccination of 116 out of 200 persons in the Bustee. After the performance of the vaccinations nine cases of cholera, of which seven were fatal, and one of choleric diarrhea, occurred in the Bustee. All these cases occurred among the unvaccinated portion of the inhabitants, which formed the minority in the Bustee; only one of the vaccinated was affected. Then, take the case of Gaya jail. M. Haffkine was invited to go there in 1894, and at a time when cholera had already broken out; six cases, five of them fatal, had occurred. During the epidemic, which lasted a fortnight after his arrival, there were on an average 409 prisoners in the jail; of this number 207 were vaccinated and 202 were not. Among the latter there were twenty cases of cholera with ten deaths; among the former there were eight, with five deaths. Here again making the proper correction for lapse of time after the vaccinations, we find that during the last six days of the outbreak there were eight cases, with two deaths among the non-vaccinated, and not a single case among the vaccinated.

Enough has been said to show that there is already good evidence that Haffkine's vaccinations afford a very distinct measure of protection against cholera. More than this, it would not be wise to say at present. Haffkine himself, with that admirable reserve of judgment which is characteristic of the Pasteur school of investigation, does not claim that the efficacy of the method has been fully proved. In the opinion of Professor Koch, however, the demonstration is already complete, and Dr. Simpson is almost equally convinced. One thing may certainly be taken as fully proved, and that is the absolute harmlessness of the vaccinations.

Changes in the Cord in Pernicious Anemia.—The *Lancet* for September 19 has the following extract from a paper on the above subject by Dr. K. Petren of Stockholm in a recent issue of the *Nordiskt Medicinskt Arkiv*, from which it would appear that the cord changes are far from uniform in this diseased condition. Petren has examined the cords in nine cases of pernicious anemia. In two of these there was clinic evidence of cord affection. In four of the cases the vessels were found to be affected with hyalin degeneration; in five were found scattered throughout the cord small hemorrhages or patches of sclerosis which had been caused by hemorrhages. In two cases in which no spinal symptoms were detected there was chronic degeneration of the posterior columns. In the first of the two cases with spinal symptoms, that of a woman aged 36 years, these consisted in impairment of sensibility, ataxy and paresis of all extremities, especially the lower, loss of knee-jerks and incontinence of urine. Throughout the cord, except in the sacral region, there was degeneration of the posterior columns extending as high up as the medulla. In the cervical and upper part of the dorsal cord there was complete degeneration of Goll's columns; in Burdach's columns there were patches of sclerosis more or less confluent, while in the lumbar region the whole posterior columns were similarly degenerated. The second case was that of a man, 42 years of age, who had been troubled with weakness in the legs three years before. Under treatment this passed off. But two years later the weakness came on again and increased so that the patient was unable to walk, and before death there was evidence of pernicious anemia and of severe spastic paraplegia in the legs. After death there was found marked degeneration of the posterior columns of the cord, most marked in the upper part and gradually lessening toward the lower end of the cord. The lymph spaces round the vessels also were swollen and filled with granular bodies and detritus. According to Petren there are usually in the cord in the case of pernicious anemia small hemorrhages which may lead to some sclerosis without clinic manifestations. The vessels also not uncommonly have thickened walls. In many cases, however, of pernicious anemia there is a true spinal cord affection which is not to be regarded as merely coincident.

From the anatomic point of view no doubt differences are found in the affection of the spinal cord in different cases, but these differences are to be explained by the manner in which the process develops in different cases. Petren is of the opinion that those cases, as regards the affection of the spinal cord, make up a special group and that probably a toxic process underlies the affection of the spinal cord as well as of the blood.

PRACTICAL NOTES.

Athletics with Music for the Insane.—Dr. B. H. Mumby, formerly medical officer of health at Portsmouth, England, is now in charge of the Borough Asylum of the same locality. He is a kind of sanitary superintendent of his charges, and one of the writers in *Public Health* (London) states that he has witnessed a cricket match between an eleven of the asylum's inmates and a team of outsiders, which augurs well for the excursive efforts of the new superintendent in the way of recreating his patients. The asylum team acquitted itself right well, having a certain amount of encouragement in the strains of a full band, the instrumentalists of which were nearly all convalescents from among their own number.

Statistics of Tertiary Syphilis.—Besides the antimercurialists, there are two parties holding opposite views in regard to the treatment of syphilis. Fournier is at the head of one with his chronic intermittent treatment, administering mercury regularly to prevent the appearance of later and severer symptoms, even when all symptoms have apparently disappeared. The others consider the excessive use of mercury injurious, and only administer it symptomatically. In order to decide the question, Raff has been collecting statistics and urges others to continue the work. It has been his experience so far that the majority of cases of tertiary syphilis had received no or very inadequate mercurial treatment in the early stages.—*Cbl. f. Chir.* November 7.

Implanted Bones.—A. Barth describes in *Ziegler's Beiträge*, No. 1, a series of experiments to determine the processes that occur when bones are implanted. He used various animals, and sawed or trephined out a small piece of the skull or of some long bone, replacing it in five minutes, and then studying the healing processes of the wound. He found that necrosis of the replaced fragment speedily ensued, while proliferation proceeded in the surrounding parts, first forming granulations and then osteoid tissue. The sawdust and scraps of bone were taken up by the giant cells and gradually became merged in the osteoid tissue. By the third week new bone had formed around the Haversian canals, until finally the new callus completely covered up the dead bone substance. It seemed immaterial whether the periosteum was retained or not. The only exception to these processes was in the case of very young animals, as in them the replanted bone retained its vitality to a certain extent. The process was substantially the same whether macerated or calcined bone was implanted, or even pieces of sponge, ivory or bone charcoal. The *Deutsch. Med. Woch.* of October 20, remarks that Barth's results are more reliable than those obtained by his predecessors, as he used the microscope exclusively in his work.

Castration and Ligating the Arteria Iliaca Interna for Hypertrophied Prostate.—It seems that long before Ramm suggested castration as a means of relieving hypertrophied prostate, Professor Sinizin of Moscow had performed the operation, as he presented at the meeting of his surgical society in March, 1894, a patient whom he had treated with success in this way eight years before. Derjushinsky mentions this fact, and adds to the 148 cases collected by Bruns, 15 more in Russian literature, four of them personal. He considers this treatment preferable to all the former methods, stating that the indications for operating depend upon the residual urine; as long as this is slight, not over 150.0, it is best to wait. But if it begins to increase, or catheterization is accompanied by pain and loss of blood, castration is indicated, except in cases of excessive weakness or severe renal affections. He describes also a series of experiments on dogs; among them ligating the arteria iliaca interna on five dogs. It was followed almost immediately by atrophy of the prostate gland, which progressed for five months, when probably collateral circulation was established, as the gland then began to grow again, and by the end of the eighth month had recovered its former size. He thinks a similar experience would follow any attempt to carry out this suggestion of Bier's in cases of hypertrophied prostate.—*Centralblatt f. Chir.*, November 7.

Renal Surgery.—Israel describes in the *Deutsch. Med. Woch.*, No. 22, his experience with a case of stones in the left kidney, which he removed through a slit on the convex side, with a stone in a solitary cyst near by. The space left by the stones was packed with gauze, until "the kidney gaped like an open oyster shell." The gaping edges were sutured to the abdominal wall and the inflamed lining of the pelvis of the kidney treated by local applications, with complete recovery. Another case of surgical kidney, with hundreds of abscesses and enlarged kidney, resulting from a criminal abortion, with a recto-vesico-vaginal fistula and the severest general symptoms, was also cured by extirpation of the diseased kidney. In two cases he operated successfully for severe pyonephrosis complicating acute gonorrhea. In another case in which the ureter turned abruptly upward and then downward, he performed a plastic operation, a sort of pyeloplicatio, with the result that not only the troubles in miction passed away, but the urine became clear and normal. A similar plastic operation on a boy of 11 restored the valve at the orifice of the ureter in the kidney to normal functions. Twelve cases of tubercular kidney were operated upon, with three cases of entire recovery and five much improved. One patient died at the time, and three have since died with tubercular foci elsewhere. In one case only part of one kidney was removed, and the amputated surface was bled for several minutes through a gauze pad pressed directly and firmly against it.

New Treatment of Prolapsus Ani.—Dr. W. B. Platt in the *Johns Hopkins Hospital Bulletin*, July, offers the following as a modification of treatment of prolapsus by suture. He says this method of treatment is not at all original with him. He had operated on a child in vain by other methods. He had twice employed linear cauterization, thus endeavoring to bring about adhesion between the bowel and the tissues, but without avail. Dr. Earle of Baltimore recommended an operation which Dr. Kelly had suggested, and which completely cured the prolapse. Not long ago this second patient entered the Garrett Hospital with an obstinate prolapse of the rectum, which projected about four inches below the body each time the child had a stool. He did this operation, keeping the suture in for three weeks. It was entirely successful. He afterward learned that Dr. Kelly has used this operation in the vagina in cases of prolapse of the uterus. In the case of the anus the operation is as follows:

"At the junction of the skin and mucous membrane, just beneath the latter, a curved needle is inserted in the median line below, and a silk thread is carried half way around the anus and out again, in the median line above, re-inserted in the same opening and brought out at the first puncture, making a purse-string suture. The little finger is then put in the anus and the string tied snugly around it. Apparently this would cause suppuration, and possibly a fistula. It does nothing of the kind, nor does it cause any pain afterward. The child has his stools in the recumbent position. If the feces are at all hard, injections are given to soften them. After three weeks the suture is withdrawn and the place kept clean, when it heals immediately with no return of the prolapsus. By this method the bowel is kept in place long enough to contract

adhesions; by the other methods it is difficult to keep the bowel from coming down after or during a stool: no pad in the world will keep it up in the case of a young child. Two weeks after the removal of the sutures in these two cases one could not tell that sutures had been used."

Fraenkel's Method of Narcosis and After-treatment of Laparotomies.—Before the operation the patient receives a subcutaneous injection of 1 to 1¼ c.cm. of the solution: Morph. mur. 0.15; atropin sulf. 0.015; chloralhydrat. 0.25; aq. dest. 15.0. Fifteen minutes later this is followed by the chloroform or ether, and in all his thousands of cases, he has never had a death from chloroform, nor even a severe case of asphyxia, and subsequent inconveniences are scarcely ever observed. In the first and often in the second night also after laparotomy, the pain of the wound is arrested by an injection of the morphin atropin solution above. The patients are not allowed to eat or drink anything whatever in the first twenty-four hours. The second day, they are given cold Russian tea, and are kept on fluid food until the third or fourth day, until the first evacuation of the bowels has been obtained with castor oil or calomel. If the vomiting keeps up after the second day it is almost always an indication of beginning ileus. He traced the ileus in one case to a loop of the small intestine which had been drawn into the drain scar. He usually applies the drain to arrest the hemorrhage, according to Mikulicz. He removes the sutures the eighth or ninth day. He never extirpates the uterus for carcinoma, except where there is a possibility of radical recovery. He prefers palliative methods where the peritoneum or vagina are involved; enucleation of the neoplasm, carbonization of the inflamed surfaces with the Paquelin, and after the scabs have fallen, cauterization of the surfaces of the wound with a solution of chlorid of zinc, 2 to 3. He has patients who have had no relapse since this treatment three years ago.—*Cbl. f. Chir.* November 7.

Cure of Carcinoma with Injections of Alcohol.—The remarkable results obtained by Hassel with injections of alcohol are described in the *Therap. Woch.*, of October 11 and 25. The alcohol favors sclerosis, cirrhosis and cicatrization in all growths like struma, angioma, cysts, lymphatic gland tumors, sarcoma, carcinoma and especially carcinoma of the breast and cervix uteri. In fifteen out of eighteen cases of carcinoma of the breast the growth gradually dwindled away, until in a year there was nothing left of it but the connective tissue stroma, and there has been no return. The three cases that were not benefited were relapses in the axilla of long standing. Five cases of carcinoma of the cervix also recovered completely and the patients are still living and in good health. The effect on the general health is even more surprising. The pains and uneasiness pass away, and sleep, appetite, assimilation and strength return in a most remarkable manner. He uses alcohol diluted one half, or even more with very sensitive patients, as he has found it less painful, while equally effective with the undiluted. He prefers a Windler syringe to a Pravaz, as the needle is longer by 4 cm. and reaches farther into the depths of the tissues. He makes one or at most two injections at a time, drawing the breast out and inserting the needle so that the alcohol will penetrate into the retromammary cellular tissue beyond the middle of the gland. The contents of the syringe should flow out gradually on gentle pressure of the piston; if there is resistance, he withdraws it a little and inserts the point sideways in another direction. In this way the retromammary space is filled with the alcohol, 5 to 10 c.cm for small tumors and 10 to 20 c.cm. for larger ones. He is careful not to touch the rear wall of the tumor, but keep always well in the space behind it. After the needle is first introduced, he withdraws it to see if any blood flows out of the hole, showing that the needle had penetrated a blood vessel. If it has, he cleans the syringe and inserts it another place. The injections are made once or twice a week at first, and then later once in two or three weeks. The patients with carcinoma of the cervix were dispensary cases and received only six to twelve injections in all, extending over many weeks. A case of inoperable cancer of the rectum is also described as much benefited, but death ensued from heart disease. He has modified the Windler syringe to make it stronger, with a metal tip that screws on, and a handle to enable it to be more strongly grasped in making injections into the uterus above the cervix, which require considerable effort. He adds that he never draws down the uterus, but leaves it in its normal position, so that the alcohol can find its way into the tissues without undue distention, which might cause necrosis. Alcohol has no effect on mastitis chronica and is therefore a means of differentiation. Several cases of mastitis chronica refused to accept his diagnosis, and had the breast removed by other surgeons, when histologic investigation confirmed his statements.

Small Medicinal Enemas for Children.—"An enlightened return to the practice of administering medicines by the rectum seems to us a veritable progress." With these words Monteuuis concludes an urgent appeal for the more general use of the rectal syringe in treating children. In convulsions nothing acts more rapidly and surely than a teaspoon or half, of pure glycerin administered per rectum, followed in fifteen minutes by a second injection of 25 centigrams of antipyrin in the first year, and 50 in the second, increasing 50 centigrams for each year. According to the author, Comby and others, children tolerate quite large doses of antipyrin without disturbances, so that it can be prescribed with confidence. If there are febrile and convulsive symptoms it must be given in large and not fractional doses. In convulsions it should be administered at 1-10 to 1-20 according to the age. The solution at 1-5 produces a slight, transient smarting. In vomiting, with gastric disturbances and headache, antipyrin is again indicated, and the rectal method by far the one to be preferred for several reasons. Habitual constipation often yields permanently to small injections of pure glycerin. When it is necessary to supply the system with liquids in infective diseases, to ensure the proper functions of the kidneys, etc., the liquids can be supplied through the rectum and all the medicines administered that way. The doses are generally the same as by the mouth. Antipyrin seems to act more rapidly per rectum, and quinin is equally effective (the neutral hydrochlorate), and is compatible with antipyrin. None of the means in vogue will soothe the nervous system as rapidly and effectively as these small medicinal injections. They are the most powerful and the most practical as has been demonstrated again and again. The evils of the old fashioned bulb syringe are avoided by using a small glass pneumatic syringe containing 5 to 6 c.cm. with a rubber nozzle, "which should be in every mother's arsenal."—*Gaz. Méd de Liége*, November 5.

Eucain in Tooth-Extraction.—The London *Therapist*, September, states that the following procedure has in denistry been found acceptable.

1. Dissolve 1 part of eucain in 10 parts of water, and boil the solution; before injection the solution must be quite clear. It is best preserved in a small stoppered glass bottle.

2. Before extraction disinfect the mucous membrane thoroughly by washing with a plug of cotton-wool soaked in hydrogen peroxid or a 2 per cent. carbolic acid solution.

3. Make the injection by inserting the needle well into the gums, about half way up the alveolus, and only inject so much of the solution that the mucous membrane in the neighborhood becomes white and slightly raised. Both buccal and lingual injections must be made. It is most important that the solution should not be injected at the junction between the gums and the mucous membrane of the cheek.

4. The extraction is made about one minute after, when the patient has himself felt the anesthesia, and not directly after injection.

5. After hemorrhage had ceased, I remove the eucain solution by puncturing with the needle and pressing upon the part with my finger.

6. Slight swellings nearly always occur after every extraction with resection. If the operator has used much eucain and especially if it has been injected near the juncture of the gums with the mucous membrane of the cheek, so that edema is anticipated, the patient should be told that a swelling will probably appear but be perfectly painless and subside of itself within a day or two. I consider this swelling quite without danger, as it is completely painless and so quickly subsides, and because I have never observed any other secondary symptoms.

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SATURDAY, DECEMBER 5, 1896.

CONGENITAL HYPERTROPHY OF THE PYLORUS AND STOMACH WALL.

Instances of congenital hypertrophy of the muscular tissue of the pylorus and stomach are so rare, the etiology of the condition is so obscure, and the ultimate consequences so serious, that the following brief reference to the report of two cases by JOHN THOMSON[1] may be of interest. PITT[2], PEDEN[3] and HIRCHSPRUNG[4] have reported cases more or less similar, but ordinarily the condition is not mentioned in the usual text-books.

The first one of the cases reported by THOMSON concerns a male infant, eighteen days old, who for a week had been vomiting all his food. The only physical sign of disease that could be found was great emaciation. There was no distension of the bowels, and no abnormality on palpation of the abdomen. There was nothing in the family history to throw any light upon the condition. When the infant was born it was well developed and well nourished. From the eleventh day of its life it vomited everything until it died. The vomited matter consisted of the milk he had swallowed; there were never any signs of blood in the vomited matter.

Postmortem examination disclosed the fact that the organs were healthy except the esophagus, which was greatly dilated, and the stomach, which greatly distended. The pylorus was very n thickened and felt like a solid cylinder; it measured nine-sixteenths of an inch in diameter and one and two-thirds inches in circumference. Compression of the stomach failed to force any of the fluid contents through the pylorus. There was no abrasion or scar of the gastric mucous membrane, but the muscular wall of the stomach was greatly thickened, especially toward the pyloric end. Microscopic examination showed the muscular layer of the pylorus to be more than three times its normal thickness, the greater part being made up of circular fibers.

The second case concerned a male infant nine and one-half weeks old. It was healthy at the time of birth, and the family and personal history of the parents contained no items that would throw any light upon the disease of their child, which was the fourth. While in good health up to about the fourth week, he nevertheless very frequently wetted his bib by vomiting a little after each nursing. At the fourth week he began to vomit everything, the vomiting usually occurring about a half an hour after the food was taken. The vomited matter consisted of the liquids taken, along with some yellowish mucus, but no blood.

Death occurred when he was nine and one-half weeks old. The postmortem examination showed considerable emaciation, but all the organs except the stomach were quite normal. The esophagus was dilated in this case also. The stomach was elongated and slightly hour-glass shaped; the pylorus was distinctly enlarged, feeling almost solid, and measured one and seven-eighths of an inch in circumference and seven-eighths of an inch in diameter. No obstruction was found to the passage of the contents of the stomach. The wall of the pylorus, on the other hand, was found to be from one-half to three-quarters of an inch thick. Microscopic examination showed the muscular tissue, the circular tissue being especially affected, to be the seat of a hypertrophy.

[1] Edinburgh Hospital Reports, Vol. 4, 1896.
[2] British Med. Journal, 1891, 1, p. 896. Trans. London Path. Soc., 1892, p. 63.
[3] Glasgow Medical Journal, 1889, p. 416.
[4] Jahrb. f. Kinderheilk., xxviii, p. 61.

500 insane patients by
regularity of the pupils in 182,
round pupils and not one elliptic,
insane 7.3 per cent. had elliptic pupils.
cases of paretic dementia uncomplicated by
ataxia SIEMERLING found the peculiar
tion described by GOWERS—primary contraction
the pupils on exposure to light, with secondary
eturn to its original size, notwithstanding the maintenance of the light-stimulus. Reversal of the pupillary reflex, the so-called paradoxic contraction, is rare, the pupils dilating on exposure to light, and vice versa. In rare instances the pupils may vary in size at different times of the day, although they may fail to react to the usual stimuli. Hippus, or restlessness of the pupils, appears to be an uncommon manifestation of paretic dementia. Slight oscillation of the pupils is present in health, as a result of various forms of sensory and psychic irritation, to which the organism is constantly exposed; so that hippus may be viewed merely as an exaggeration of a physiologic manifestation, resulting from increased activity of physiologic stimuli or of undue susceptibility of

the centers controlling the movements of the pupils.

A study of 9,160 cases of mental disorder under observation at the Charité of Berlin during a period of ten years, in which examinations of the eyes were made, shows that reflex immobility of the pupils was present as follows: Paretic dementia, 1,524 cases (92 per cent.); locomotor ataxia in association with psychoses, 29; senile dementia and local disease of the central nervous system each 19; syphilis of the central nervous system 17; alcoholism 15; paranoia 7; epilepsy and hysteria each 4; head-injuries 1. On the other hand in previous examinations made by UHTHOFF in 550 cases of nervous disease and 12,000 of ocular disease, reflex immobility of the pupils was found only 136 times; in 92 cases of locomotor ataxia, 12 of paretic dementia, 11 of syphilis, 8 of other forms of focal disease, 2 of multiple sclerosis, 2 of railway spine, 2 of congenital origin, 1 of head-injury, 1 of aneurysm of the aorta, 1 of congenital idiocy, 1 of tobacco-excess, 1 of hystero-epilepsy and 1 of right hemianesthesia; in 3 cases no cause could be decided upon. From these data it will be seen that reflex immobility of the pupils is a most important symptom, and although not an absolute indication of such grave disorders as paretic dementia and locomotor ataxia, it may be looked upon as positive evidence of disease of the nervous system. In this connection it is to be borne in mind that sometimes long intervals may elapse between the appearance of the pupillary phenomena and the development of other distinctive symptoms.

It is well known further that the pupils often became dilated under conditions of fear, in the somnambulistic state and in that of ecstacy, especially in debilitated and neurotic persons. In the intervals between epileptic attacks the pupils have been observed to be not only large but also unusually susceptible to reflex irritation. In some cases the pupils also differ in size. During a paroxysm the pupils are both dilated and unresponsive to light. This last peculiarity is characteristic of epilepsy and distinguishes it from hysteria, so that if in a given case the pupils react to light in some convulsive attacks and fail so to react in others the condition may be looked upon as one of combined hysteria and epilepsy. The pupils are said to be usually contracted at the beginning of the hysteric or hystero-epileptic seizure, becoming dilated in the tonic-clonic stage, in which also oscillatory movements take place, to become pronounced in the stage of passionate attitudes. In the tonic stage of the epileptic paroxysm the pupils are dilated and in the clonic stage alternately dilated and contracted. In hypnotic and hallucinatory states the pupils are said to react in accordance with the distance from which imaginary objects are viewed. Attentive listening to the ticking of a watch has been attended with dilatation of the pupil corresponding to the listening ear.

Sensory irritation causes pupillary dilatation in health, though not always in the aged. This reaction has been found wanting in cases of paretic dementia, as a rule in association with absence of the pupillary contraction to light-stimulation; although at times pupils unresponsive to light-irritation underwent dilatation; the knee-jerk was often wanting. The reaction was active in epileptics and timid persons. It could be induced by irritation of anesthetic areas in cases of hysteria, but not when the impairment of sensibility was due to peripheral disorder. Pupillary reaction to sensory and light stimuli is wanting in conditions of coma and returns slowly afterward. There is no consensus of opinion as to whether the reflex activity of the pupils to light or that to other sensory stimuli ceases first. Hypalgesia of the skin appears to have no influence upon the sensory reflex of the pupils. It has been found that the reaction-time of the pupillary act is increased in paretic dementia and some other nervous disorders. Increased activity of the pupillary reaction has been observed following widespread circulatory disturbance and in cases of morphinism after withdrawal of the drug.

A consideration of the foregoing summary will show that a careful and systematic study of the size, form and activity of the pupils under various conditions is capable of yielding important information, which future classification and further experience may prove to be of considerable value in diagnosis and prognosis as well as suggesting certain therapeutic indications.

THE SLOWNESS WITH WHICH IMPORTANT MEDICAL DISCOVERIES ARE GENERALLY PUT TO PRACTICAL USE.

It is a remarkable and lamentable fact that many years often elapse before an important and scientifically established discovery in either the theory or practice of medicine becomes an essential constituent of diagnosis and treatment in the hands of the practicing physician. The newspaper-advertised fad is quickly enough caught up, but alas, the newspapers know nothing of the great scientific advances in medicine.

Too much caution can not be exercised in the investigation and adoption of medical innovations. It goes without saying, that as a rule, experimentation should not be pursued in private practice. The field for such work is generally in the hospitals and laboratories established for original research, and carried on by men carefully trained in practical knowledge and observation, and who by specializing their studies, are usually much more capable of producing valuable and definite results than their fellows engaged in the practice of general medicine. Conservatism in medicine is at all times highly desirable. But, alas! there are men who, either from indifference, scepticism, ignorance, or, if it must be said, from

absolute laziness, refuse to avail themselves of genuinely scientific and established methods. Take, for example LAVERAN'S important discovery of the plasmodium of malaria; how many men go on blindly prescribing ounce after ounce of quinin on the slightest suspicion or faintest indication in clinical history? Yet these very men are not seldom the faddists and fanatics who rush headlong in their eagerness to experiment with such remedies as antitoxin and tuberculin, made notorious by the newspapers. One can but laugh at some surgeons with inexperience in practical physics and photography, and working with crude apparatus, who publish elaborate reports and show skiagraphs of a foreign body located by the Roentgen rays. Personal vanity and desire for publicity stand out in every line of such reports. Yesterday by such simple means as inspection, palpation and percussion, in which these men had become expert by long use, they would have attained the same result in infinitely shorter time. The individual skill of years is ruthlessly discarded in bungling efforts to appear as an "up to date" surgeon.

On the other hand, when we review the patient struggles of JENNER to establish vaccination, of PASTEUR, LISTER, and their associates, to promote asepsis and antisepsis in surgical maneuvers, of the hygienists to instill into the public mind principles and laws of which the medical mind generally seemed ignorant, we find abundant proof of the truth of our contention. At the present time, how many graduates of medicine are seeing a dozen or more patients a day, and prescribing for their maladies without once resorting to a urinary examination, unless absolutely compelled by consultation, or by life insurance companies? The writer has personally known several instances in which men with large general practices never make an analysis of the urine. How many are treating headaches, neuralgia, nervousness, hysteria, dyspepsia and other disturbances that are often reflex, without the slightest means of determining the existence of some form of ocular asthenopia, or if they are incapable of making this investigation, without consulting an oculist, despite the reports of hundreds of reflex neuroses caused by some ocular trouble such as an uncorrected error in refraction? Trustworthy oculists and general physicians certify that sick headache frequently (some say always) is due to eye-strain, yet thousands of sufferers are today left in misery and ignorance of the fact by their physicians? The latest book from the press, by a distinguished specialist on diseases of the stomach, makes no mention of the indubitable influence of refraction anomalies in begetting functional stomach disorders. How many are daily treating blood-dyscrasias regardless of the modern methods of blood analysis and corpuscle-counting, which, beyond all sceptical argument, are important and infallible elements of diagnosis?

These and many similar questions can have but one answer; accurately estimated, the magnitude of the number is appalling of those in this sorry roll of sceptics (by inclination rather than proper motive) idlers, and even ignoramuses.

It needs no extended search to reveal the fundamental causes of it all. They are especially two: 1, the love of the community, innate, persistent, almost unconquerable, for its quacks—those both in and out of the profession proper; and, 2, the commercial medical college. A medical college should be an institution of preliminary training; the whole of the after-medical life should be reserved for study, taking advantage of the proper elementary education to further the slow evolution of a skilled physician. The graduates of poor or of fraudulent medical colleges are too frequently unable to understand, appreciate, or practice medical advances. They are helpless in their lack of laboratory knowledge and technic, and they are debarred from participation by their deficiency in clinical diagnosis. There is no more significant and convincing plea for higher medical education, and increased clinic and laboratory training than in these unfortunate facts. Early and late we should endeavor to have the State take commercialism completely out of medical education; abolish private institutions, and pseudo-medical colleges, whose motives are too apparent to be called ulterior, forever exterminate the monetary sale of medical diplomas, secret or open, for in many cases it is nothing more or less than this, and we shall then be able to meet the taunts of our co-workers in other professions, who while acknowledging the superiority and genius of the select few, say that medicine today, as practiced by the great majority is antiquated, empirical and unscientific.

No supercilious sneer from the safety of numbers, nor time-worn retorts, such as "calamity howler," "grumbler," and "professional objectionist," can suppress, at least, our lay critics. Reforms in medical education alone can convince the world, and place medicine in its deserved position among the sciences of the day.

CORRESPONDENCE.

Reply to "The Controversy over the Harvey Medical College of Chicago."

CHICAGO, Nov. 28, 1896.

To the Editor:—Being the originator of the discussion regarding the recognition by the Illinois State Board of Health of the Harvey Medical College and others of the same type, permit me to make the following reply to Dr. Byron Robinson's letter which was published in your last issue.

The writer of the letter, for some of whose opinions in his special field of work I have the highest respect, has undertaken with one master-stroke of his pen to apparently settle the difficult problem of medical education by proclaiming the Harvey Medical Evening College of Chicago the queen of med-

ical institutions. At least that is the tone of the Doctor's article.

Had I not known any more about the Harvey than is given in the above-named letter I should have unqualifiedly agreed with the Doctor and joined in his praises of Harvey and never would I have uttered a word in condemnation of its methods.

But Dr. Byron Robinson has only told us one-half of the truth. The fact is, that the statements as given in his paper have been handed him by the college secretary just as the dry-goods man gives an advertisement to the daily press. And here was a real opportunity to get cheap advertising. Besides, his statements have a fatal resemblance to those made in Harvey's Annual Announcement and in the lay-press of Chicago. It is well to remind those who have not followed up this controversy of the reasons why the Harvey has of late been mentioned at all.

Two of Harvey's professors have positively resigned their respective chairs because pressure was brought to bear upon them to sign diplomas of candidates for graduation who did not pass their very important branches of the practice of medicine and pathology respectively. It was also found that out of the eight candidates whose diplomas were to be signed—because the management decreed it so—not one had even *credentials* for pathology, some failed in medicine, few had credentials of any sort, not to speak of a preliminary education. Furthermore, examination papers in my posession show that not only do some students of Harvey lack the necessary qualifications for admission into a medical college, but that they are also devoid of the most rudimentary knowledge of English syntax and orthography.

To prove this: One sophomore student spells the word *infiltration* twice in two succeeding sentences, *inflatration*, and again *lukecytes* for leucocytes, *necrossis* for necrosis, *unpripard* for unprepared. I could fill up columns with the most unpardonable errors in syntax and spelling committed by Harvey night school students, but space does not permit it.

As regards the teaching faculty Dr. Robinson says: "In short, the faculty consists of a body of fifty respectable men and women, who are giving intelligent and thorough modern medical instruction." Of course, the Doctor then picks out five names and himself and wife and asks: "Who are the teachers connected with Harvey College that they should be agents of a diploma mill?" In answer to this question I will say that they are not the agents who get pay, but the tools of a diploma mill, whether they know it or not. They get their reward in being called "professors," which title enables them to throw dust into the eyes of an unsuspecting public.

Besides, as regards ability, one of Harvey's full-fledged professors would not even be admitted as a student into any school in good standing. I had occasion, as the then professor of pathology, to examine that professor in my branch; for that professor is still a student. For lack of space I can not give any of the syntax found in the professor's examination papers, but a few words as they are spelt by the professor may with propriety be inserted here: parenchima for parenchyma, adapoise for adipose, lucocytes for leucocytes, Kleobs-leifler, Kloebs-Leifler for Klebs-Löffler, vaginia for vagina, generaly for generally, fibronous for fibrinous, tomane for ptomaine, odemia for œdema, disolution for dissolution, suporate for suppurate, vegatable for vegetable, etc.

The professor in question is still teaching at Harvey at the date of this writing. Of course, comment is unnecessary and every reader can form his own idea regarding the education of such a professor. But how Dr. Byron Robinson and his wife, Dr. Lucy Waite, happen to be mixed up with that class of professors, I can not comprehend; the fact remains, he is there. Surely there is another way out of the difficulty beside eulogizing the institution and its faculty.

The Doctor starts his letter with an enumeration of all the students who graduated from Harvey and speaks of their attendance at other colleges previous to their entrance in Harvey as seniors, and right there is where he mistakes mere matriculation for attendance. Everyone knows how easily a matriculation-ticket can be procured and that it is not even equivalent to admission into a school, still less is it evidence of having passed in junior branches, but that students have been admitted into Harvey College as juniors and seniors who have *never* produced a ticket of attendance anywhere, is quite sure, and the Doctor knows it.

Again, the Doctor mentions the fact that several Harvey students from the sophomore and freshmen classes were admitted to advanced standing into other respectable colleges. This speaks well for their good judgment, first in entering a good school and second, in working hard to be admitted into another school. None of the Harvey professors, not excluding the secretary, ever doubted that the freshmen students were far superior to the graduating class in intelligence and preliminary education.

One point in Dr. Byron Robinson's statements, upon which he expends considerable mathematical energy, should be particularly mentioned, namely, his figures of the number of hours that Harvey night students have as compared with the still existing standard day schools of six months instruction per year. But does not every physician who has been a student know that the mind can absorb knowledge more readily in the early part of the day than in the evening; that, when mind and body are fatigued, one might as well go to sleep as study? And is it not a fact that when one has followed any ordinary occupation for the entire day, that he is tired in the evening, and that even three lectures of the Dr. Robinson style, delivered from 7 to 10, evenings, will act as a hypnotic?

Occasional glances into Harvey's lecture-rooms during lectures have, beside, convinced me of the strong hypnotic powers possessed by Harvey professors. When can such a student find time to study and review when he must rise early in the morning in order to reach his place of occupation?

"Was not Lincoln a rail-spitter?" the Doctor exclaims. This point has repeatedly been made by all varieties of public declamers; but Lincoln ceased to split rails when he entered college; he no more belonged to the rail-splitters when he studied law, while Harvey night-school students do.

Again, "during the past two years every senior saw one or more labors." Of those that came up for graduation in 1896, I know positively that about one-half of the students never saw a case of labor. Students have been promised ten labors in 1897. To make a promise and to fulfill it are two things.

What the student should see beside labors, are the diseases that he may encounter in his daily practice. Why labors are made a specialty in Harvey College may probably be accounted for by the fact that there are so many ladies connected with the school.

As a last resort, Dr. Byron Robinson takes up an inventory of Harvey's belongings, and counts in everything he finds round about the building, even the poor students' microscopes, for it is a fact that each Harvey student must buy his microscope on the installment plan from the faculty if he wants to look through one. Harvey offers space for the storage of microscopes gratuitously. There are several things that Dr. Robinson left out in his inventory, such articles of wealth as chairs, benches, stationery, etc.

Speaking of the Harvey building, any one who takes a stroll through Clark Street will find—if he patiently searches for it, in spite of the deafening roar from the dime-museum orchestra across the street—a building inscribed the Harvey. In that building is a Good-luck store, above this a private dispensary, a dentist, and then the private offices of some members of the faculty. The top floor and the one below it constitute the Harvey College proper. The entire building, however,

has been christened "The Harvey," as per contract. This is the building which Dr. Byron Robinson has found in the real estate records under the name "Harvey."

That the medical profession has never recognized Harvey as a college in good standing, and that it has not even been given a passing notice in the JOURNAL, will be learned from the following editorial published in the JOURNAL of September 12.

. . . "There are many alleged medical schools not accounted for in this exhibit, but as a rule, they ought not to be considered. We have been informed that there are about fourteen medical schools in Chicago, alone; only a few of these have any reason for existence, and if rigid requirements were insisted upon they would close their doors.

"The struggle for existence is at the root of the evil; finding themselves unable to compete with the real college professor in obtaining practice from the public, these persons, with others of the same ilk, start a so-called medical college, and become a 'professor' themselves. There are few statutory requirements; an act of incorporation can be obtained for a silver dollar in any stage of depreciation, a building rented and a flaring sign put across its front. Verily, the 'professors' are as plenty as the leaves of Vallambrosa. If we look into the equipment of these raw institutions we find the laboratory wofully lacking in the most ordinary apparatus, and like Dotheboys Hall, squalor and filth are the most prominent characteristics. The only wonder is that such men, with such miserable equipment, can find students; but they flourish in some way." And in the next number of the JOURNAL under the heading "The Medical Colleges of the United States," we find of Chicago colleges, the Northwestern University Medical School, Rush Medical College, College of Physicans and Surgeons, Northwestern University Women's Medical School, Chicago Policlinic and Hospital, and Post-Graduate Medical School and Hospital, but not a word is mentioned of either Harvey Medical Night School or any of the other so-called medical schools. This simply shows the good sense of the representative medical journal of this country and of the profession generally.

Dr. Byron Robinson evidently believes that the fair-minded editor of the *Western Medical Review* who so strikingly criticizes the sorry state of affairs in Illinois must of necessity, become a Harvey professor before he can acquire correct judgment.

But since Dr. Byron Robinson has become the teacher of gynecology and abdominal surgery in the Harvey Medical Night School, we are glad to learn that fact, "so that the appearance of evil may not arise."

And as a fitting supplement to Dr. Robinson's article I would request the journals to copy this article in the interest of the profession that stands not only for "truth and justice," but also for higher medical education.

Respectfully, JULIUS GRINKER, M.D.

952 Milwaukee Ave.

"A Prevalent Error in Refraction Work."

CHICAGO, Nov. 29, 1896.

To the Editor:—Dr. Ed. J. Brown's letter on "a prevalent error in refraction work," published in the JOURNAL of November 21, was to me full of surprises. "That most oculists have been giving low plus cylinders where minus lenses were indicated," was startling news to me, for I had never suspected this, though through private conversation and public discussions in ophthalmologic societies I am well acquainted with the views of a great many oculists on the question of correcting refractive errors. But I got a second and stronger dose of surprise when I found I, too, was counted among the guilty ones because I was supposed to have given a clergyman a + 50 cyl. axis 90 instead of a — 50 cyl. axis 180.

The oculists among your readers, of course, clearly understand from Dr. Brown's own report of the case, that in this instance the asthenopia was *not* caused by the refractive, but by the muscular anomaly. But to your readers unfamiliar with the mysterious jargon of ophthalmology this may seem an awful blunder, and I therefore wish to explain to them that the mistake, if one was committed, was not on my side. If the astigmatism had been the disturbing element, the + 50 cyl. would have permanently relieved the patient's trouble in reading, whether the astigmatism was hyperopic in the horizontal meridian or myopic in the vertical meridian. For if hyperopic astigmatism, the + cyl. rendered the eye emmetropic; if myopic astigmatism, the same cylinder made the eye uniformly myopic, a condition even more advantageous than emmetropia, for prolonged near work to a man now 38 years old.

Dr. Brown kindly gave me the name of the patient when I wrote for it, and I found in my records that he came to me in July, 1892, with + 50 cyl. 90 which he had been wearing since February, but without marked benefit. He chiefly complained of eye pain and headache after short reading, and incidentally remarked that one year previous he was given — 50 cyl. 180, which he could not use at all. I found a slight hyperopic astigmatism for which the + 50 cyl. were the proper lenses; and since these glasses had not relieved the patient I became satisfied that his asthenopia must be due to some other condition than the astigmatism. The muscle tests showed insufficient adducting power (6° only); marked divergence under cover and exophoria (9°) at reading distance. These findings convinced me that the case was one of muscular asthenopia; it was entered as such in my record book and my prescriptions to the patient were directed toward relieving temporarily the weak muscles during near work so as to make reading easier for him, and to improve the feeble adducting power by systematic exercise.

As to the cylinders the patient was wearing, I saw no reason why I should object if he wished to use them, for in my opinion it was of no consequence whether they were worn or laid aside. I do not attribute the relief the patient experienced for nearly two years afterward to the use of the cylinders but to the changed muscular condition, the adduction having gained considerably, as shown by Dr. Brown's report, and I am firmly convinced that this patient will be permanently relieved only when the forces of the eye muscles are properly adjusted by appropriate treatment suggested by a careful study of existing anomalous conditions. Though during the past year he seemed to have been better satisfied by the — 50 cyl. (which formerly he postively rejected), I am sure he will sooner or later return with his old asthenopic complaints, and, indeed, in his letter to me of November 25, Dr. Brown wrote: "I saw the patient Monday evening and he mentioned symptoms which are probably referable to the weakness of the externi." *Sapienti Sat.*

F. C. HOTZ.

"God and the Doctor we Alike Adore."

ST. PAUL, Nov. 30, 1896.

To the Editor:—The lines quoted by R. M. W. in your issue of Nov. 28, 1896, and concernirg the authorship of which he asks information, are a translation of a Latin epigram written by Euricius Cordus, who was a professor of medicine in Marburg in the sixteenth century. The original Latin is:

"Tres medicus facies habet, unam quando rogatur,
Angelicam; mox est, cum juvat ipse, Deus.
Post, ubi curato poscit sua præmia morbo,
Horridus apparet terribilisque Sathan."

Yours truly, BURNSIDE FOSTER, M.D.

MONONGAHELA, PA., Nov. 30, 1896.

To the Editor:—R. M. W. of Brooklyn, N. Y., will find the lines,

"God and the doctor we alike adore,
But only when in trouble, not before.
The trouble o'er, both are alike requited;
God is forgotten, and the doctor slighted."

in Ben Jonson's "Magnetic Lady," Act II, Scene 1.

C. B. W.

Practice for Sale.

CHICAGO, Dec. 2, 1896.

To the Editor:—I leave Chicago on Jan. 1, 1897, to take special work in European hospitals and I desire to dispose of my practice without a total loss. I therefore write to you to inquire if you have any inquiries for such a location. I am well established in the largest family hotel in Chicago and will sell cheap, as all my arrangements are made to leave Chicago January 1 or before. J. D. W.

ASSOCIATION NEWS.

Philadelphia Semi-Centennial Meeting of the American Medical Association, June 1, 2, 3 and 4, 1897.—In view of the fact that the next meeting will be the semi-centennial gathering and that it will occur in the great medical center and near the other great cities of the Eastern Coast, the Committee of Arrangements for this meeting have already made provision for accommodation and entertainment of the delegates by the engagement of the Academy of Music, Horticulture Hall, the South Broad Street Theater and the large meeting rooms in the Hotel Walton and the Hotel Stenton. As these large buildings are all within a short distance of the great railroad depots in the center of the city and are all situated within one block on both sides of Broad Street, every department of the meeting will be conveniently arranged. The following hotels, all of them within a short distance of the meeting halls, have offered the following rates to the members of the ASSOCIATION:

Hotel Walton, Broad and Locust Streets (Headquarters): $1.50 and upward per day, European plan; $4 and upward per day, American Plan.

The Colonnade, Fifteenth and Chestnut Streets (three squares from meeting): $1 and upward per day, European plan; $3 and upward per day, American plan.

The Lafayette, Broad and Chestnut Streets (one and one-half squares from meeting): $1 and upward per day, European plan; table d'hôte, breakfast 25c to $1; luncheon 75c; dinner $1.25.

The Bingham House, Eleventh and Market Streets (six squares from meeting): $2.50 and upward per day, strictly on the American plan.

Hotel Stenton, Broad and Spruce Streets (opposite meeting): $2 and upward per day, European plan; $4 and upward per day, American plan.

The Continental, Ninth and Chestnut Streets (eight squares from meeting): $3 and upward per day, strictly on the American plan.

The Windsor, Thirteenth and Filbert Streets (three and one-half squares from meeting): $1 and upward per day, European plan; $2 per day, American plan.

The Stratford, Broad and Walnut Streets (one square from meeting): $1 and upward per day, European plan only.

The price quoted in each instance is for one person only. Rooms commanding only the lowest prices are naturally limited in number. All these hotels can be reached in a few minutes by trolley cars.

It is especially desirable that each member intending to be present at the meeting shall personally, or by letter, make his arrangement with the hotel at which he desires to stop.

At the last meeting of the ASSOCIATION it was decided to devote the first evening of the meeting, Tuesday, June 1, to dinners of the various Sections. The officers of the Sections desiring to give such a dinner will please communicate with Dr. G. E. de Schweinitz, Chairman of the Sub-committee on Accommodation, 1401 Locust Street, as early as possible in order that dining rooms may be engaged or other entertainment provided.

As it is expected that fully three thousand physicians will be present the Committee suggests that application for accommodations be made as early as possible. It is hoped that every member of the ASSOCIATION will make a special effort to attend. Further circulars of information will be issued by the Committee from time to time.

Individuals and firms desiring space for exhibition in the Exhibition Hall, which will be in the same block as the various meeting halls, will please apply promptly to the Chairman of the Sub-committee on Exhibits, Dr. Edward Jackson, 1673 Locust Street, Philadelphia.

Section on Obstetrics and Diseases of Women.—*To the Members of the American Medical Association:* Being desirous of securing a large number of papers for the section on Obstetrics and Diseases of Women for the Philadelphia meeting, and wishing to make this the greatest meeting of our ASSOCIATION, I take this method of urging the members of this section, and all who desire to read papers before this section on that occasion, to send the titles of their papers either to my address, or that of Dr. George H. Noble, Sec'y, Atlanta, Ga., not later than January 30. The necessity for promptness in this matter will be readly understood by all interested.

MILO B. WARD, M.D., Chairman.
332 Greenwood Ave., Topeka, Kan.

SOCIETY NEWS.

Association of American Medical Colleges.—*Committee on Syllabus.*—The work of this committee was published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, April 18–25, 1896. A reprint was made, which can be furnished to teachers and colleges on application to the secretary. The work already done has received commendation from many educators, and has been found helpful in reorganizing and extending the course of many medical schools. A third meeting of this committee is called for Thursday and Friday, December 17 and 18, at the College of Physicians in Philadelphia, and an attempt will be made to complete the work of the committee both by revising the report already made and by completing the outline for "group 3," *i. e.*, medicine, surgery and obstetrics. Any college having membership in the Association would assist the committee by sending a representative to this meeting or by forwarding to the secretary written criticisms on the work already done or suggestions in relation to the unfinished portions of the curriculum. For each of the branches to be considered it will probably be well to discuss and formulate recommendations in relation to the following points:

1. The position in the four years' course which it should occupy.
2. The amount of time which it demands.
3. The method or methods which should be used in its presentation.
4. The equipment, apparatus, library, hospital or armamentarium necessary and desirable for the methods proposed.
5. The method of testing the proficiency of the student.

The committee will meet at 10 o'clock in the morning in the rooms of the College of Physicians and lay out and complete the work as rapidly as the subjects will permit.

BAYARD HOLMES, M.D., Secretary.
104 East Fortieth Street, Chicago.

NECROLOGY.

GUSTAVUS A. SABINE, M.R.C.S.E., of New York City, died November 17, aged 84 years. He was born on June 27, 1809, in County Dorset, England, and when 15 years old was a student of medicine in the office of Dr. McIntire in London. He remained there four years, and then entered Middlesex Hospital, London. In 1832 he received his degree from the Royal College of Surgeons, and one year later was appointed a sur-

geon in the East India Company service. In 1836 he came to America, and in the following year married a daughter of the late Captain Tufnell of the British Army. At various periods of his career in this city, Dr. Sabine was curator of the New York Hospital, demonstrator of anatomy in the College of Physicians and Surgeons, consulting surgeon to the Quarantine Hospital and Woman's Hospital. He was a member of the New York Academy of Medicine, the County Medical Society and of other medical societies and charitable and religious associations. He retired from practice about ten years ago. A widow, one son and three daughters survive him. He had been in infirm condition of health for a year, due chiefly to the effects of a busy life and the weight of years.

SIR BENJAMIN W. RICHARDSON, M.D.—The recent death of this eminent man, in London, brings out some traits of character which are worthy of all emulation. First, he was thoroughly honest and broad in his conceptions and never dogmatic or positive that his views or conclusions were the last and final truths. He was ever open to new statements and arguments. He was a natural-born investigator and examined all topics, no matter what others had found, preferring to ascertain the facts for himself. His studies of alcoholic ethers began in this way, not willing to trust to the conclusions of others, he must examine for himself. Many of his researches are remarkable for their original work, and the conclusions he reached have been verified by others in many ways. His health studies were epoch making and placed him among the leading sanitarians of the world. Beside this real genius of discovery, he possessed a graphic power of description in matters of science so clear that any one could understand it. This gave him a high rank in societies and public meetings, where he was always able to make himself clearly and thoroughly understood. While he described scientific conclusions to the masses, he never sacrificed the truth, or dropped down to levels of obscure or doubtful descriptive language. Hence his popular discussions of science topics were as accurate as if presented in the most technical terms. Outside of medicine Dr. Richardson was widely known as an author and lecturer on temperance questions. His researches of the effects of alcohol were practically the first positive data that pointed out the action of alcohol on the body. These studies grew out of an invitation to deliver some lectures on alcoholic ethers and their value in sanitary matters. He began, as was his custom, original studies before he would make statements of facts. The result was the "Cantor Lectures," which has become one of the most widely published books of the times on alcohol. As a result of these studies Dr. Richardson became a total abstainer and was the most prominent physician in England who denied the value of alcohol in medicine except within very narrow limits. Dr. Richardson wrote and published a journal, "The Asclepiad," contributing all the matter, which was scientific and historical and of great value. He also wrote two novels of much interest and many works of chemical and sanitary science. He was a remarkable student all his life and was always investigating and following up some new line of studies. He was literally a great man in his scientific generosity, industry and efforts to impart to others the facts he believed to be true.

WM. REMSEN TAYLOR, M.D., of Long Island City, New York, died October 1, at Middletown, N. J. Dr. Taylor was one of the oldest practicing physicians in Long Island City and was a man widely respected. He was health officer of that city for six years and was a candidate twice for the office of coroner and once for mayor, on the republican ticket. Dr. Taylor was lieutenant colonel of the Twenty-ninth New Jersey Volunteers.

THOMAS MCCROSSEN, M.D., of City Island, N. Y., who died September 18, was an alumnus of the New York University Medical Department, of the class of 1879. He was a native of New York City, born there in 1851. He was graduated from the public schools and taught at Southampton and Amityville, L. I. Afterward he took a course in medicine at the College of the City of New York, from which he was graduated about twenty years ago. He located at City Island sixteen years ago, where he has ever since enjoyed a large practice.

CHARLES BERNACKI, M.D. (Vienna, 1839), of New York died at Schandau, a Saxon watering place, September 17. He was born at Starasol, Galicia, Nov. 3, 1812. The first years of his career he spent in different military hospitals of Austrian Poland, and later in private practice in Vienna until he emigrated to the United States, as a part of the politico-social drift of 1848. In April, 1864, Dr. Bernacki was appointed medical director of the Germania Life Insurance Company of New York, in which position he remained up to his death. A widow and a daughter survive him, while a son, also a physician, and a daughter, died some time ago.

J. T. WILSON, M.D., of Galesburg, Ill., born in Sweden, Sept. 10, 1857, died Nov. 27, 1896. The following preamble and resolutions were passed by the Galesburg Medical Society.

WHEREAS, It has pleased Divine Providence to remove from us one of our ablest members,

WHEREAS, We the members of the Galesburg Medical Society, desire to place upon record our appreciation of the character of our deceased brother; be it

Resolved, That in the death of Dr. J. T. Wilson, the Society has lost a devoted, able and faithful colleague, whose earnestness of purpose and loftiness of motive, peculiarly fitted him for the profession which he adorned.

Resolved, That the loss which we thus mourn, is not limited to our Society, or even to our city.

Resolved, That we most respectfully and sincerely extend our heartfelt sympathy to his family, wishing for them that consolation which is the outcome of his noble life.

Resolved, That a draft of these resolutions be spread upon the minutes of the Society and that a duplicate be sent to the city and medical press and that a copy be transmitted to the family of our deceased friend. H. P. Beirne, Sec.

MISCELLANY.

The Health of the Explorer Stanley.—Mr. H. M. Stanley is recovering from a severe attack of gastritis. It will be remembered that he was at death's door for nearly a month when he returned home from Lake Nyanza to bring up the Barttelot rear column, that he had another serious illness when he was with Emin Pasha's people, and that he was so ill before his marriage that during the ceremony in Westminster he had to be given a chair. In each case gastritis accompanied by recurrence of fever is the cause of illness. Mr. Stanley is 55.

McGill Alumni at New York.—The second annual meeting of the New York Graduates' Society of McGill University, Montreal, was held November 10. Among the officers elected for the year were the following: The vice-presidents, Dr. Wolfred Nelson and Dr. James A. Meek; secretary, Dr. W. Ferguson; treasurer, Dr. H. N. Vineberg; executive committee, Dr. George C. Becket. The graduates of the faculties of medicine, law, arts, science and veterinary medicine of McGill University, now residents of the United States, number over 500, of whom 50 live in and near New York. The society will found a scholarship, to be known as the Sir John William Dawson Scholarship, in memory of Sir John William Dawson, who has devoted his life and energies to making McGill University the leading teaching body in the Dominion of Canada.

The Loomis Mountain Sanitarium.—The name of the late Dr. A. L. Loomis of New York city is in perpetuity identified with an undertaking for the treatment of incipient phthisis, located at Liberty, Sullivan County, N. Y., about four hours' distance from the city. At present the following structures are included in the sanitarium: Administration building, of stone, 200 feet in length and three stories high; casino, of stone, and four one-story cottages. The examining physicians are Dr. H. P.

Loomis, No. 58 East Thirty-fourth Street; Dr. C. E. Quimby, No. 44 West Thirty-sixth Street, and Dr. J. E. Stubbert, at the sanitarium, who is also physician in charge. The sanitarium has been in active operation only since June, and the demand for accommodation has been so great as to necessitate the use of wards originally intended for emergency cases. Bedrooms have been arranged in the casino to partially meet the demand. The present capacity is thirty-one beds.

Carriers of Sick Passengers.—If a carrier accepts a passenger knowing that he is sick or infirm, the appellate court of Indiana says, in the case of Furgason v. Citizens' St. R. Co., decided Oct. 13, 1896, it must use ordinary care to see that he is transported safely, and is given a reasonable time and proper assistance in getting on and off its cars. But it will not be required to accept and transport one having a contagious disease, which might be communicated to other passengers. Neither will it be required to accept as a passenger one who is physically disabled and unable to take care of himself. A carrier, the court continues, is not bound to turn its cars into nurseries, prisons, or hospitals, or its employes into nurses or jailers. Neither is it required to furnish medical attendance, medicines, or other articles necessarily needed by the sick. If a person desiring to become a passenger is unable, on account of extreme youth or old age, or any mental or physical infirmities, to take care of himself, he ought to be provided with an attendant to take care of him. The carrier is not bound to furnish him an attendant. Finally, it is the duty owing from a carrier to all of its passengers alike, whether sick or well, able-bodied or infirm, old or young, rich or poor, white or black, to use at least ordinary care in their transportation; and any negligence on its part resulting in injury to a passenger without the passenger's negligence contributing thereto must be answered for in damages.

"In the Crowd," a Study of the Popular Mind.—M. Le Bon lays stress upon the importance to legislators and statesmen of the study of crowds, and after this preliminary he takes his crowd and proceeds to submit it to a masterly dissection. He brings out the almost appalling powers which a crowd possesses on account of the irresistible power given by its numerical strength. "An isolated individual knows well enough that alone he can not set fire to a palace or loot a shop, and should he be tempted to do so he will easily resist the temptation. Making part of a crowd he is conscious of the power given him by numbers, and it is sufficient to suggest to him ideas of murder or of pillage for him to yield immediately to temptation." Of course, this feeling may be exerted for objects which are morally or religiously correct. M. Le Bon cites, among other instances, the Crusaders and this, perhaps, is the most wonderful example of how a crowd can be acted upon. Let anyone read the history of the Crusades and mark how all classes set forth from the highest to the lowest, many without arms, food or clothing, how they traversed half a continent and were content to die within sight of the Holy City. Such acts show, as perhaps nothing else could do, that crowds, unreasoning, impulsive and essentially feminine as they may be are still capable of the most heroic acts.

The Naval Hospital, New York.—The overcrowded condition of this institution has been the subject of a careful investigation by the Department of the Navy, and as a result an appropriation of $10,000 has been secured for the erection of three new buildings. These buildings, the plans of which have been approved, will consist of a pavilion, the kitchen and laundry and the mess hall and dispensary. They will all be connected with the main building by means of corridors. The ward building will be erected on the site in front of the present structure, and will be the largest of the new structures. It will be two stories in height, and when completed will have room to accommodate 100 patients, beside having quarters for the ward officers and the corps of attendants. The building is to be lighted by electricity, and the elevators will be operated by the same power. This building, when completed, will be one of the finest in the State for hospital purposes. It will cost about $50,000. The other buildings are to be erected in the rear of the old hospital. The kitchen and laundry will be situated near the cemetery, and will be the smallest of the new structures. The third building will contain the mess hall and a large room on the first floor for the use of convalescents. On the second floor will be the dispensary and chapel, while the third floor is to be given over to the operating room. Like the first building, the other two will be fitted with all modern appliances. The roof of the dispensary building will be fitted with glass to admit light into the operating room. The operating room will equal those of the finest hospitals in the country. These buildings, with the old ones, will make the naval hospital at this station equal, if not superior, to any connected with the naval stations in the country.

New York State Commission in Lunacy.—Dr. Carlos F. Macdonald has resigned the presidency of the above named commission, in order to assume charge of a large private institution in Westchester County. He had held that important position under three governors, and his recommendation of Dr. P. M. Wise to become his successor was influential and controlling. Dr. Wise, the new president of the commission, has given a quarter century to service of the State and the care of its dependent insane. In 1873 he was appointed assistant physician and in 1884 he was promoted to the medical superintendency of the Willard asylum. In 1889 he accepted the medical superintendency of the new St. Lawrence State Hospital at Ogdensburg. The latter institution was conceived in a most enlightened spirit of progress, and was intended to be an exponent of the latest and most approved plans of hospital construction and administration. In the seven years of Dr. Wise's incumbency, the policy of the hospital and basis of its organization has been completed. It is recognized throughout the scientific medical world as a model of convenience and adaptability for its purpose, and has already attained a high reputation as a curative institution. Dr. Wise thus brings to his new position a mature experience gained in long and active duty in the great department of which he is now the head. Dr. Wise was highly commended by Dr. Macdonald as his successor and the Governor's action in appointing him is most commendable.

The Jubilee of the London Pathological Society.—On October 20 or four days later than the Boston jubilation over surgical anesthesia, the pathologists of London celebrated the fiftieth anniversary of their society. Of the original members only one, Sir Richard Quain, was present, and he reported that besides himself there were now surviving from other charter members, Sir John Simon, Sir William Jenner, Mr. Holthouse and Mr. Wagstaff. Sir Richard Quain said he could recall the meetings fifty years ago and regretted that he was the only original member who was able to be present that night. At the first meeting of the society a memorandum was addressed to the profession putting forward the claims for the formation of a pathologic society in London, which should not be behind Dublin and other towns which already possessed such a society. He referred to the original founder of the society, Thomas Bentley, who, however, remained comparatively unknown. He commented on the great advance that had been made in pathology since the time when pus was decribed as "a clear fluid containing globules." The work of the society had been well done, as was evidenced by the value as books of reference of the Transactions of the Pathological Society. Dr. Wilks said he could remember how the proposal to form a society for the study of pathology originated at a meeting held at the house of Dr. Thomas Bentley, who at that time lived in Trinity Square, Dr. Barlow being in the chair. He compared the present position

of pathology and morbid anatomy and regretted the tendency to neglect the latter for the former, and more especially the separation of clinical medicine from pathology. He pointed out how slow the profession had been to accept views which today were well recognized. He alluded to the great value of the work of the Pathological Society and the excellent papers which were to be found in the Transactions of the society. During its fifty years of existence many who have since risen to eminence in medicine and surgery have owed their first introduction to the notice of the profession to this society. Its published transactions no doubt reflect the gradual evolution of pathologic doctrine, but at the same time they embody the observations of some of the most gifted minds. A society whose meetings have seen among the most constant attendants and contributors such men as Jenner, Bristowe, Quain, Peacock, Hulke, Hutchinson, Hilton Fagge, Moxon, Wilson Fox, Bastian, Gawen Sutton, Murchison, Gull, De Morgan, Prescott Hewett, Dickinson, Holmes and Greenhow, to name but a few, must be able to embrace all branches of the science with which it deals, and ought to enjoy perpetual vitality. The full address of the president of the society, Mr. Henry T. Butlin, delivered on that occasion, is published in full in the *Lancet* for October 24.

The Flagellate Form of the Parasite of Malaria.—Dr. R. J. Marshall, writing from a malarious section of the south of Spain, refers to the views of Manson and Ross about the passage of the parasite of malaria into the mosquito before its introduction into the human victim. Surgeon-Major Ross examined human blood from the stomach of mosquitoes fed on the blood of a malarious patient, in whom crescents were abundant, and he found that crescents after being half an hour inside the stomach of a mosquito were all converted into spherical bodies or flagellate bodies. Dr. Manson considers that these results strongly support his theory. "Living in a district where malaria is at certain seasons very rife, though mosquitoes scarce, I have been unable to make any experiments with blood from the mosquito's stomach, but have by a very simple process observed occurring what Surgeon-Major Ross found occurred after blood had been half an hour inside the mosquito's stomach, *i. e.*, the conversion of all crescents into spheres or flagellates. Lately, while examining a specimen of blood rich in crescents, I in accordance with a suggestion made to me by Dr. George Thin, placed a drop of distilled water on the edge of the cover of a preparation of the fresh blood. In the ordinary preparations of this blood I had found numbers of cresents, but very few spherical bodies, and only one or two flagellates. On examining the specimen so treated after a few minutes I found no crescents, but numbers of spheres with more or less movable pigment and also a large number of flagellated bodies. I therefore prepared a few specimens by placing a minute drop of distilled water and inverting on it a cover charged with a minute drop of blood. I examined this immediately and found that the crescents almost at once became spherical. Their pigment granules, previously clustered in a bunch, became scattered and movable. After a short interval the pigment granules became more and more active, then violently agitated, and soon flagella made their appearance lashing about in the most lively manner. In less than five minutes there was not a single crescent to be seen, while I had beautifully displayed to view large numbers of flagellate organisms, to find a single one of which I have often sought in vain in blood fairly rich in crescents. The flagellate manifestation lasted for half an hour or more, and the specimens when examined three or four hours later only contained spheres with still pigment or clusters of free pigment granules. I also observed that red corpuscles containing small parasites retained their normal color amongst the decolorized corpuscles not containing parasites, and the parasites themselves became swollen and globular and more distinct, with their pigment granules more visible than formerly. What bearing these phenomena may have on Dr. Manson's theory I can not venture to say, but only express the opinion that they are due to the imbibition of water by the crescent, and that this may take place as well in the stomach of the mosquito as in any other place where blood containing crescents is mixed with a comparatively inert fluid. Anyone desirous of seeing flagellated organisms can thus very soon see them if he only will mix blood containing crescents with a minute quantity of water before making his examination."

Things Experts Can Testify To.—The case of Quinn v. O'Keefe, in which the appellate division of the supreme court of New York handed down a decision Oct. 6, 1896, was an action brought by a physician to recover damages for injuries received in consequence of a collision between the phaeton in which he was driving and a truck alleged to have been negligently driven by the servants of the defendant. The vehicles were proceeding in different directions, and according to the evidence in behalf of the plaintiff, they would have passed one another without accident if the truck had continued to move upon the same line as it was moving along when first closely observed by the doctor. His fall, there was evidence to show, resulted in a progressive malady of the spinal cord, from which it was reasonably certain that he would never recover. The jury returned a verdict in his favor for $8,000, and the above court affirms a judgment entered therefor and an order denying a new trial. Numerous points were raised for review. As a result the court holds, among other things, that the testimony of the plaintiff to the effect that, in his best judgment, the men on the truck were partially intoxicated, was properly admitted. It was proper to receive the evidence which the plaintiff gave as to the difference in his weight before and after the accident. Whether the change was due to any injurious effects of the accident or not was a question for the jury. It is proper to ask an expert witness what certain symptoms which are exhibited by the plaintiff indicate in respect the part of the body which is affected. He does not give additional force to his testimony, nor harm the defendant, by answering when asked whether he can state positively to the jury that, if one or other of two assumed conditions existed it would produce that condition, without speculation and from his own knowledge of the case as a physician and surgeon—that "a physician or surgeon has very little positive knowledge. He gives his judgment. I can give my judgment in this case. That is all." Nor can the court compel an expert witness to give a categorical answer to a question of opinion evidence which the witness says he is unable to answer categorically. A hypothetic question is unobjectionable if the assumptions contained in it are within the probable or possible range of evidence. It is also proper to ask whether the accident described in the hypothesis is capable of producing such physical results as are ascribed to it. And a question is not objectionable which asks whether such a wrench to the backbone as has been described does not sometimes involve some sort of disorganization of the spinal cord or its coverings. Probabilities are proper to be considered in reference to an existing physical condition, and it is held that it would be manifestly unjust to keep from the consideration of a jury the expert evidence of a physician that the plaintiff exhibited symptoms which were equally characteristic of two different internal conditions, either of which conditions could be occasioned by the accident which had befallen the patient, simply because the witness was unable to say with certainty which of the internal conditions actually existed. Physician or layman can testify as to the change in the plaintiff's appearance after an accident.

Louisville.

LOUISVILLE CLINICAL SOCIETY.—The members of this society met at the Pendennis Club of this city as the guests of Dr. J. W. Irwin. A brief business meeting was held prior to the

banquet, and election of officers entered into for the coming year. A very spirited canvass had been waged by the friends of two members for the presidency, the canvass finally being decided by the election of Dr. Irwin. Dr. George W. Griffiths, the retiring president, acted as toastmaster, and the following toasts were responded to: "The Clinical Society," Dr. T. P. Satterwhite; "Deceased Members," Dr. Peter Gunterman; "Specialists," Dr. William Cheatham; "Young Members," Dr. F. W. Samuel; "AMERICAN MEDICAL ASSOCIATION," Dr. Joseph M. Mathews; "The Future," Dr. S. G. Dabney; "Doctor as a Traveler," Dr. August Schachner; "Medical Education," Dr. I. N. Bloom; "Microscopists," Dr. Carl Weidner; "Ethics," Dr. W. C. Dugan; "Quackery," Dr. W. H. Wathen; "Professional Writing," Dr. J. W. Irwin. Louisville is essentially a city of medical clubs, there being four or five societies which meet once or twice a month, the business and scientific part of the meetings being followed by a collation. Several attempts in the past have been made to create a general society, the Academy of Medicine, which lived a year, being a sample; either the absence of a collation or too many societies was the cause of its demise.

KENTUCKY VALLEY MEDICAL SOCIETY.—At a recent meeting of this association at Jackson, the following officers were elected for the ensuing year: President, Dr. B. D. Cox, Sr.,; vice-president, Dr. B. D. Cox, Jr.; secretary, Dr. D. B. Littlepage.

HEALTH OFFICE.—The annual report of the Health Officer for the month ending the 28th of November has just been printed. The total number of deaths was 223 as compared with 235 for the corresponding month of last year. Consumption heads the list with 26 deaths; heart disease 15; pleurisy 11; typhoid fever only 3, a very small death rate from the number of cases there have been in the city; 38 cases of diphtheria were placarded, with 8 deaths; 19 cases of scarlet fever, with no deaths; 90 persons were vaccinated by the Health Department; 33 diseased cattle killed and 377 diseased cattle condemned and sent from the city.

Medico-Literary Notes.

THE NEW YORK HERALD offers the following apology and explanation: "Dr. William Hirsch, the brilliant German author of 'Genius and Degeneration,' is now traveling in the United States. He has a namesake in New York City. Both are physicians, eminent each in his own line. Both have written books of great scientific value. But each is satisfied with his own laurels and unwilling to filch any from his neighbor. Last week we reviewed 'Genius and Degeneration.' By a curious but not unnatural oversight the portrait of the other Dr. William Hirsch, which was filed away for use among its archives, was published with the review. Both gentlemen have called our attention to this oversight, which we cheerfully set right, with expressions of the highest regard for both."

THE UNIVERSITY OF TOMSK IN WESTERN SIBERIA.—This university, which has now been in existence about nine years, and consists at present of a single faculty—that of medicine—had, according to a recently issued report, 413 students, of whom only 3 were of native parentage, the majority being sons of priests. In the year 1895, 64 out of 117 who entered five years previously completed their course, 54 of whom received their diploma as Vrach, or medical practitioner. Up to the present time the university has educated 151 medical practitioners and is evidently partly supplying a very great want, as in such a sparsely populated country as Siberia medical men are necessarily very few and far between.

DR. R. W. FELKIN of Edinburgh, a high authority in African climatology, has written a book in which he discusses the important question, "Can Europeans Become Acclimatized in Tropical Africa?" He is strongly of opinion that it can only be possible if emigration occurs step by step, and its development must be counted by generations, not by years. The continent of Africa is divided by him into eight divisions, and the natural characteristics of prevalent diseases of each of these divisions are discussed. There is a fuller consideration given to such special diseases as malaria, beri-beri, yellow fever, dengue, etc. The map illustrating the geographical distribution of certain diseases is ingenious, and not being overloaded with details, is easily read. By placing alongside this a map giving the topographical features of the continent, their relationship to special diseases can be easily seen.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Nov. 21 to Nov. 27, 1896.

First Lieut. Benjamin Brooke, Asst. Surgeon, ordered to Chicago, Ill., to appear before examining board for examination as to his fitness for promotion.

Capt. Eugene I. Swift, Asst. Surgeon, leave of absence granted on surgeon's certificate of disability is extended two months on account of sickness.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the two weeks ending Nov. 28, 1896.

Surgeon A. F. Magruder, detached from the marine barracks, Washington, and placed on the retired list, Nov. 16.

P. A. Surgeon J. S. Sayre, placed on retired list Nov. 16.

Medical Director H. M. Wells, detached from the naval laboratory, New York, ordered home and placed on waiting orders, Nov. 18.

Medical Director T. C. Walton, detached from the naval academy Dec. 15, and ordered to the naval laboratory

Surgeon C. T. Hibbett, detached from the "Independence," ordered home and granted three months' leave.

P. A. Surgeon F. W. Olcott, detached from the "Enterprise" Nov. 27, and ordered to the "Independence."

P. A. Surgeon W. F. Arnold, detached from special duty and ordered to the "Enterprise" Nov. 27.

P. A. Surgeon J. M. Moore, detached from the "Texas" Dec. 7 and ordered to the "Castine" Dec. 8.

P. A. Surgeon L. H. Stone, detached from the "Castine" Dec. 8, ordered home and placed on waiting orders.

Asst. Surgeon S. B. Palmer, detached from the "Vermont" Dec. 7 and ordered to the "Texas."

P. A. Surgeon P. Leach, promoted to Surgeon from Nov. 15, and P. A. Surgeon T. C. Craig, promoted to Surgeon from Oct. 14.

Surgeon A. G. Cabell, detached from the "Michigan," ordered home and granted three months' leave.

P. A. Surgeon F. J. B. Cordeiro, detached from the "Constellation" and ordered to the "Michigan."

Asst. Surgeon L. Morris, detached from the naval hospital, Philadelphia, Dec. 5, ordered to examination for promotion at New York Dec. 7, and then placed on waiting orders.

Asst. Surgeon R. G. Brodrick, ordered to the "Constellation."

Medical Director T. C. Walton, detached from the naval academy Jan. 18 instead of Dec. 15, and ordered to the naval laboratory, New York, Jan. 19, Nov. 24.

Medical Director H. M. Wells, detached from the naval laboratory, New York, Jan. 19 instead of Dec. 19.

Surgeon W. S. Dixon, detached from special duty in Washington and ordered to the "Brooklyn" Dec. 1, Nov. 25.

Change of Address.

McMahon, C. Agnes, from Chicago, Ill., to 17 Grove Street, Asheville, N. C.

Carveth, C. B., from Bloomfield, Neb., to 13 and 14 Berkshire Blk., W. Superior, Wis.

Quales, N. T., from 241 Milwaukee Av. to 42 Fowler St., Chicago, Ill.

LETTERS RECEIVED.

Alta Pharmacal Co., St. Louis, Mo.; Advertisers' Agency, The, Philadelphia, Pa.

Bock, Charles, Fort Wayne, Ind.; Boylan, J. E., Cincinnati, Ohio; Brillinger, Geo. W., Syracuse, N. Y.; Blakiston, P. Son & Co., Philadelphia, Pa.; Beirue, H. P., Galesburg, Ill.; Bodine, J. M., Louisville, Ky.

Center, Chas. Dewey, Quincy, Ill.; Cobb, W. F., Lyle Minn.; Crawford, J. K., Cooperstown, N. Dak.; Cousins, M. H., South Charleston, Ohio; Coe, W. B., Tonganoxie, Kan.; Crosby, John B., Buffalo, N. Y.

Dibrell, J. A., Jr., Little Rock Ark., (2); Dossey, W. F., Rome, Texas.

English, W. T., Pittsburgh, Pa.; Eureka Chair Co., The, Worcester, Mass.

Fassett, Charles Wood, St. Louis, Mo.

Gibon, A. L., New York, N. Y.

Holmes, Bayard, Chicago, Ill.; Hesing, Washington, Chicago, Ill.; Hare, H. A., Philadelphia, Pa.; Houston, James, Swarts Creek, Mich.; Hammond, J. C., Hauna, Wyo.; Hummel, A. L., Adv. Agency, New York, N. Y., (3).

Johnson, M. M., Hartford, Conn.

Kelsey, R. C., Indianapolis, Ind.; Kimmel, B. G., Monmouth, Ill.; Knauth Bros., New York, N. Y.; Katharmon Chemical Co., St. Louis, Mo.

Laycock, R. G., Hopedale, Ill.; Link, J. A., Cincinnati, Ohio; Long Island Bottling Co., Brooklyn, N. Y.

Marshall, John S., Elyria, Ohio; McClelland, W., Washington, Iowa; Madden, John, Milwaukee, Wis.; Mayfield, W. H., St. Louis, Mo.; Mayhew, S. J., Newark, N. J., (2); Mariaunl & Co., New York, N. Y.; Malone, G. B., Memphis, Tenn.; Merriam, G. and C. & Co., Springfield, Mass.; Nixon, W. J., Patoka, Ill.; McKellar, James, Hazleton, Pa; Morse, L. D., Adv. Agency, New York, N. Y.

Nelson, D. T., Chicago, Ill.

Ott, Isaac, Philadelphia, Pa.

Parke, Davis & Co., Detroit, Mich.; Proctor, S. A., Doniphan, Mo.; Puckey, Wm. & Bro., Wilkesbarre, Pa.

Robertson, C. A., Nashville, Tenn.; Rosser, J. C., Grand Rapids, Minn.; Robinson, S. E., West Union, Iowa.

Souchon, Edmond, New Orleans, La.; Saunders, W. B., Philadelphia, Pa.; Strong, F. H., New York, N. Y.; Scribner's Sons, Chas., New York, N. Y.; Strong, B. F., Howard, Kan.; Schneider, M., Paris, France.

Talbot, E. S., Chicago, Ill.; Trumbauer, Chas. A., Keokuk, Iowa; Todd, Wm. J., Mt. Washington, Md.; Trout, E. H., Chicago, Ill.

Ward, Milo B., Topeka, Kan.; Way, J. Howell, Waynesville, N.C.; Wandless, Henry W., Dallas, Texas; Wakely, T. A., Jacksonville, Ill.